The impact of microinsurance on household welfare in South Africa

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Noluyolo Magazi
To my mother, for giving me wings and my sister who continues to be my air
ABSTRACT

Despite recent economic growth over the last decade and high insurance penetration, the provision of insurance services to low-income households in South Africa is still neglected owing to pervasive information asymmetry. Even though households identify the importance of insurance, this has not translated into changed behaviour. According to KPMG, while 74% of households recognise their need for insurance, an overwhelming 34% lack any plans to address their perceived risk. Furthermore, there exists an incongruity between the perceived risks (such as job loss or loss of income) and the dominant insurance product in the market – which continues to be funeral cover. The study assessed the impact of microinsurance on the household welfare, measured as household income per capita. The analysis draws on the nationally representative 2015 FINSCOPE survey, which contains in-depth data on the financial inclusion of 5000 households. Descriptive statistics were assessed to determine the nature of the identified variables and the relationship between them. The study performed multiple linear regression analysis using an Ordinary Least Squares (OLS) estimation. The empirical results provide evidence that microinsurance has a positive and significant effect on household welfare. Specifically, the results reveal that health and life insurance contribute favourably to household welfare, whilst credit life and funeral cover depict an inverse correlation. This suggests that health and life insurance better enables households to effectively manage risk and cope with adverse shocks. Furthermore, using household income per capita as a proxy for welfare, we observe that household size, dependency ratio, geographical location, gender of the household head, and marital status are statistically significant determinants of household welfare. Consistent with previous studies, where the educational attainment of the household head is at secondary and post-secondary level, households are empowered to utilise financial services to improve welfare and reduce incidence of poverty. Conventional insurance products do not appropriately serve the needs of lower income groups as often it is either too expensive or mismatched as coverage is possibly excessive, therefore we advocate for the creation of uniquely designed products and distribution systems that promote greater insurance inclusion for this segment of the market.
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## Glossary of Terms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ATM</td>
<td>Automatic Teller Machine</td>
</tr>
<tr>
<td>BBBEE</td>
<td>Broad Based Black Economic Empowerment</td>
</tr>
<tr>
<td>BRICS</td>
<td>Brazil, Russia, India, China and South Africa</td>
</tr>
<tr>
<td>CENFRI</td>
<td>Centre for Financial Regulation and Inclusion</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>FAIS</td>
<td>Financial Advisory and Intermediary Services</td>
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<tr>
<td>FPL</td>
<td>Food Poverty Line</td>
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<tr>
<td>FSB</td>
<td>Financial Services Board</td>
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<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>LBPL</td>
<td>Lower Bound Poverty Line</td>
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<tr>
<td>MPCI</td>
<td>Multi-Peril Crop Insurance</td>
</tr>
<tr>
<td>NDP</td>
<td>National Development Plan</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnership</td>
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<tr>
<td>RDP</td>
<td>Reconstruction and Development Programme</td>
</tr>
<tr>
<td>SAIA</td>
<td>South African Insurance Association</td>
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<tr>
<td>UBPL</td>
<td>Upper Bound Poverty Line</td>
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<tr>
<td>UNSDGs</td>
<td>United Nations Sustainable Development Goals</td>
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ACKNOWLEDGEMENT

This truly has been a work of patient endurance – and I too after having done the will of the Father have obtained the promise. Thank you, Lord, for holding me up with Your righteous hand in low moments of fear and doubt, where I was just about ready to let go. Thank You for never letting me go and thank you for loving me.

I would like to extend a great gratitude to my supervisor, Dr Abdul Latif Alhassan, for his continued patience and guidance throughout this thesis writing period. To my family, for their ceaseless prayers, continued love and support as I embarked on this journey. To my parents and my siblings who stepped in to take much of the responsibility of being a parent to my children in periods of absence as I focused on my studies. To my extended family in Cape Town – for accommodating me, feeding me and praying for me, I am eternally grateful for your moral support, and encouragement.

I extend my appreciation to the Finmark Trust for making available to me the 2015 FINSCOPE survey data to complete this work.
CHAPTER ONE
INTRODUCTION

1.1 Background of the study
South Africa is confronted by extremely high inequality rates and possesses one of the most skewed income distributions in the world (World Bank, 2018) and is beset with the triple challenge of high unemployment, poverty, and inequality. The country’s Gini coefficient of 0.7 is double the OECD average of 0.3 and well above the BRICS average of 0.5.\(^1\) Poverty is skewed across age, gender, demography and geography as 54.0% of blacks, 47.1% of females, 55.7% of children and 50.7% of youth aged 18-24 were living in poverty; and rural areas (68.8%) were exhibiting double the poverty of urban areas (30.9%).\(^2\) South Africa recognises three poverty lines – the food poverty line or FPL (household income is inadequate to meet the required daily energy intake of approximately 2 100 kilo-calories per day), the lower bound poverty line or LBPL (household income is inadequate to meet both food and non-food item requirements; therefore, food is sacrificed to purchase non-food items). Among households on the lower income band, food and non-alcoholic beverages constitute the single largest category of expenditure - accounting for a third (33.5%) of all expenditure of poor households (StatsSA, 2014). The third poverty line, the upper bound poverty line or UBPL is where household income can generally purchase both food and non-food items.

The eradication of poverty and reducing inequality have been the overarching theme of government policy since the advent of democracy in 1994. The social wage - mainly provided through “free primary health care; no-fee paying schools; social grants; RDP housing; and the provision of free basic services”\(^3\) - is a cornerstone of government's efforts to improve household welfare. StatsSA estimates that approximately 60% of government spending is on social wages and expenditure on these services has in the last ten years more than doubled, in real terms.\(^4\) This expenditure has contributed to the reduction in the poverty gap and the severity of poverty between 2006 and 2011. In 2014, Statistics South Africa (StatsSA) estimated that 21.7% of households live in extreme poverty, while a staggering 37% do not have adequate income to purchase both food and non-food items hence the

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\(^1\) OECD, 2011, Special Focus: Inequality in Emerging Economies
\(^2\) StatsSA, 2014, Poverty Trends in South Africa
\(^3\) World Bank, 2014, Overcoming Poverty and Inequality in South Africa
\(^4\) StatsSA, 2014, Poverty Trends in South Africa
purchase of food is sacrificed to pay for transport, electricity, clothing and airtime. While poverty rates have declined over the years owing to progressive taxation and government spending, poverty lines (the rand value required to meet food and non-food item requirements) is rising at a higher rate than inflation. The food poverty line (FPL) rose by 12.9 percent in 2016, an increase that is more than double the inflation rate and far higher than the budgeted increase in social welfare grants. The United Nations Sustainable Development Goal (SDG) 1 seeks to eradicate poverty in all its forms – more specifically to “eradicate extreme poverty and build the resilience of the poor and reduce their exposure and vulnerability to economic, social and environmental shocks”5. As such the debate around the issue of poverty eradication is no longer solely centred around access to basic services but has evolved to how financial inclusion is a lever for sustained long-term economic progress at the household and economy level. Nanziri (2016), argues that “there is some evidence that depicts that access to financial products and services permit firms and households to move away from short-term decision making to an inter-temporal allocation of resources thus improving the livelihoods of the poor by increasing household income and building resilience” in a global economy that is increasingly prone to shocks (Nanziri, 2016; Karlan & Zinman, 2010; Yunus, 2006).

Exposure to uninsured risk leaves poor households vulnerable to disastrous losses from negative shocks. Faced with uninsured risk, many households are left with little alternative than to undertake costly coping strategies to manage incomes and assets. Welfare costs due to shocks and foregone profitable opportunities have been found to be significant, thus contributing to persistent poverty (Morduch, 1995; Dercon, 1996, 2004; Rosenzweig and Binswanger, 1993; Elbers et al., 2007; Pan 2008). Microinsurance has the potential to reduce these welfare costs.

1.2 Problem Statement
Microinsurance provides indemnity against the risk of adverse shocks thus households are able to avoid costly risk management strategies thus results in positive outcomes for reducing poverty and keep future income earning opportunities intact. Akotey (2015) adds that microinsurance permits low-income households to avoid welfare losses as they are covered by insurers against events that have the potential to force them to sink below the poverty line.

5 UNDP, 2019, 2030 Agenda for Sustainable Development
Uninsured risk and vulnerability to shocks can have temporary consequences, but there is a expanding body of literature showing evidence that shocks can have permanent consequences – creating a poverty trap (Janzen & Carter, 2013). The definition of a poverty trap is “any self-reinforcing mechanism which causes poverty to persist." (Azariadis and Stachurski, 2005, p. 326).

Exposure to uninsured risks constrains access to credit, increases dependency on fiscal transfers, results in undesirable welfare outcomes, (Alderman & Haque, 2007; Akotey 2015), and adversely impacts household productivity. Without insurance poor households are limited in their ex-post risk coping strategies and often make the choice between destabilising critical consumption and depleting productive asset shocks; ex-ante risk management strategies present similar trade-offs that have analogous permanent consequences (Janzen and Carter, 2013). In the absence of insurance, households often rely on informal and costly risk management strategies that consistently undermine their future productivity and welfare. Informal coping mechanisms deal with immediate risks in the short term and are insufficient to build resilience against slipping into persistent poverty and foster long term growth.

1.2 Research Question and Objective
This study seeks to provide answers for the following research questions;
- What is the impact of microinsurance on household welfare in South Africa?

Based on the above research question, the study seeks to;
- To examine the impact of microinsurance on household welfare amongst households in South Africa.

1.3 Purpose and Significance of the Research
In this study, we investigate the impact of microinsurance on South African low-income households. The majority of studies on microinsurance or insurance for the low-income household segment of the market has evolved around issues of penetration and determinants of uptake (Browne and Kim, 1993; Beck and Webb, 2003; Elango and Jones, 2011; Feyen, Lester and Rocha, 2011; Arun, Bendig and Arun, 2012; Kjoseveski, 2012) and there is a dearth of studies on the impact of insurance on household welfare. This study seeks to provide new evidence by filling the apparent empirical gap by using a nationally
representative sample of South African low-income households to evaluate the impact of microinsurance on household welfare. This study contributes to the literature on the role of insurance and development, as well as the debate on the welfare benefits of financial inclusion. Insurance contributes to inclusive growth and the effectiveness of the credit function, therefore if there are significant welfare gains from financial inclusion then this study is imperative to poverty alleviation and reducing inequality. This study has implications for policymakers interested in advancing economic development and improving the functioning of financial markets; financial institutions, private stakeholders, seeking increased investments and donors or non-governmental agencies wishing to support increased financial inclusion.

1.4 Organisation of the study
This study is organised is five main chapters including this introduction. Chapter 2 covers an overview of the microinsurance sector in South Africa as well as establishing the theoretical framework underlying this research and a comprehensive review of literature on microinsurance and the impact of insurance on household welfare. Chapter 3 contains a thorough overview of the research approach and strategy that is used to analyse the impact of microinsurance on household welfare. Chapter 4 presents the results and discussion, employing ordinary least squares (OLS) to examine the impact of microinsurance on household welfare. The study culminates in a summary of the findings and their policy implications, presented in chapter 5. This chapter also draws conclusions based on the empirical findings and discusses avenues for further future research.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
This chapter looks at various debates on the role of insurance in the finance-growth nexus and
moreover provides a general overview of the microinsurance sector in South Africa. The
theoretical framework underpinning the analysis into the economic behaviour of households
is explored and a systematic analysis into the characteristics of individual behaviour under
risk owing to the recognised importance of insurance as a vital component in the system of
risk pooling and the stability of the economy. The chapter concludes with a discussion of the
objectives and significant findings of relevant empirical literature.

2.2 Overview of Microinsurance in South Africa
With an estimated gross domestic product of US$349.3 billion, South Africa is the second
largest economy on the African continent after Nigeria (IMF, 2017). The country has
extensive natural resources and is the leading global producer of platinum, gold, chromium
and iron. Average growth year-on-year from 2002 to 2008 was 4.5%, the fastest expansion in
the country’s economy since the advent of democracy in 1994. South Africa’s economic
performance has since been marred by slowing demand in commodities from China, low
global commodity prices, erratic capital flows and low consumer and business confidence.
Successive government administrations have failed to adequately address structural problems
such as the widening inequality gap, low-skilled labour force, high unemployment rate,
deteriorating infrastructure, high corruption and crime rates. The International Monetary Fund
(IMF) expects Africa’s more industrialised economies to grow by 1% in 2017; however, it
forecasts that after marginal recoveries in the mining and agricultural sectors South Africa
will grow by 0.8% as perceptions of public policy uncertainty still pose a downward risk
(IMF, 2017).

Access to financial services in South Africa is distinctly divided between the highly served
high-income and low-income market, with the latter largely excluded from the formal sector.
The formal financial services sector is very sophisticated and well-regulated with over 90
percent of bank assets owned by the country’s five largest banks – Absa, Capitec Bank, First
National Bank, Nedbank and Standard Bank. The payment infrastructure is strong with more
than 26 000 ATM (Automatic Teller Machines) and a multitude of point of sale devices
spread across the country. The formal insurance market is dominated by corporate insurers, with 75 commercial long-term life insurers and 97 non-life insurers. In the informal sector, an estimated 100 000 mutual burial societies serve between 4 – 8 million individuals and 3000 – 5 000 funeral parlours providing funeral cover.

Insurance has been defined as “the provision of financial protection contingent on the occurrence of a predetermined risk in exchange for ex-ante premium payment”.6 Churchill (2007) describes microinsurance as the protection of low-income people against specific perils in exchange for regular premiums proportionate to the likelihood and cost of risk involved. Pes et al. (2016, p.177) further elucidate that microinsurance “is formal insurance tailored to a clientele with vastly different income and risk profiles than those of traditional schemes” and should not be perceived as merely rationalized insurance. Thus, microinsurance can be broadly defined as the provision of a wide range of financial products and services to the low-income population.

Microinsurance has three distinct roles: (1) provide pay-out in the event of insurable loss occurring thus reducing costly coping mechanisms; (2) promotes continued investment after the insurable loss has occurred thus avoiding stunting the growth of smallholder farmer welfare and agricultural productivity; and (3) insurance acts as security/collateral thus provides access to credit and deepens financial inclusion. The potential of insurance for financial intermediation cannot be underscored, especially for low-income households as it stimulates access to credit and promotes investment in higher risk-higher return activities thus leading to efficiency gains.

2.2.1. Characteristics of the South African Microinsurance market

According to the World Bank (2012), the estimated global market size for microinsurance among economically active clients (US$2 to US$4 per day) is 2.6 billion people with the potential to generate premium income of US$33 billion. This market in South Africa is estimated at approximately 24.3 million people. The global market for the extremely poor is 1.4 billion people (estimated at 7 million in South Africa), generating premium income of an estimated US$7 billion (Swiss Re, 2010b). Figure 2.1 below depicts an estimation of the potential global and South African microinsurance market.

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6 World Bank, 2012, Disaster Risk Financing and Insurance in Sub-Saharan Africa: Review and Options for Consideration
Insurance penetration – the ratio of gross premiums to gross domestic products – measures the contribution of insurance activities to economic growth and serves as an indicator for market maturity (Alhassan, 2016). As at 2015, the premium to GDP ratio was estimated at 14.71 percent, making South Africa amongst the global leaders in insurance penetration. The sector is well developed with 75 long term life and 97 short term non-life insurers. The formal sector is dominated by corporate insurance, with only three mutual insurers and many burial societies providing funeral insurance within the limited-benefit threshold provided under insurance legislation.

Figure 2.2 gives an illustration of the microinsurance market in South Africa. An estimated 30% of adults use microinsurance, with just over half being formal insurance and the remainder comprised of informal risk-pooling and self-underwriting by funeral parlours not approved as insurers. The country’s microinsurance market is distinguishable from other international markets in that compulsory credit life insurance accounts for a mere 22 percent of the total microinsurance market, while voluntary insurance accounts for the majority of the market. Credit life insurance continues to increase in prominence owing to the development of the micro-credit market, thus compulsory credit life insurance could be as high as 41 percent.

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7 OECD Data, [https://data.oecd.org/insurance/insurance-spending.htm#indicator-chart](https://data.oecd.org/insurance/insurance-spending.htm#indicator-chart)
8 Santam has the largest share of the insurance market at 24%, and is second Hollard with 11%, followed closely by Mutual & Federal with 10%. AVBOB is the country’s largest mutual insurer.
percent when focusing on the formal market. The social norm that necessitates a distinguished and expensive funeral drives the demand for funeral insurance thus it dominates the sector. This has seen the mushrooming of a robust informal market of risk-pooling through mutual burial societies, with an estimated 100 000 such societies enjoying a customer base of between 4 and 8 million individuals (Bester, Chamberlain, Short and Walker, 2005). Funeral parlours also offer funeral insurance, albeit over half do so informally (formal provision is where the policy is underwritten by a registered insurer); therefore, one can deduce that approximately half of the demand for funeral insurance is met informally. Despite innovation and the introduction of new products aimed at low-income households – housing, cellphone, personal accident - non-life and non-funeral life insurance have achieved limited uptake among the poor. Research insights indicate that limited up-take is due to “affordability and a lack of awareness of the value proposition offered by such products”.

The rapid adoption of mobile usage has resulted in the voluntary take-up of cellphone insurance, the only asset-based insurance product starting to achieve some uptake.

**Fig 2.2 Composition of the microinsurance market**

![Image](source: Bester et al (2009), Finscope 2013)

The Financial Service Board (FSB) is the statutory body mandated with the oversight and supervision of the insurance industry. The Long-Term Insurance Act (52 of 1998) and the Short-term Insurance Act (53 of 1998), govern the life and non-life insurance industries, respectively. Registration under either legislation is permissible for public companies that

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9 Smith et al., 2010, Reaching the client: Update on microinsurance innovation in South Africa
conduct insurance as their main business. Composite licences are not permitted, and a single company may not hold more than one insurance licence. Foreign-owned insurance firms are permitted to operate in South Africa provided they do so through a South African domiciled wholly-owned subsidiary. The presence of foreign firms in the South African market has created a more mature market, with price competition, product development, improved product offering and service quality (Butterworth and Malherbe, 1999). The Financial Advisory and Intermediary Services (FAIS) Act (37 of 2002) regulates market conduct and sets standards for the intermediation of insurance to enhance consumer protection. The downside of such consumer protection is that the FAIS Act increases the per transaction cost of intermediating financial services (lower revenue per premium), creating a disincentive to serve lower-income segments of the market. Since legislation permits sales by a non-authorised intermediary as long as they don’t offer advice, the market is segregated between the high-income segment served with detailed advice and the low-income segment remain largely uneducated about the products they have purchased.

In terms of the Friendly Societies Act (25 of 1956), a friendly society is a “non-profit organisations or associations of persons established to provide relief or maintenance during minority, old age, widowhood or illness for members or persons related to members. Such relief could include payment of a sum of money upon birth of a child or upon death of members, for the insurance of tools used in a trade, for unemployment benefits, for education or training of members or their children, or such other business as may be proclaimed in the Government Gazette” (FSB, 2016). Advertising by societies is strictly prohibited, and services may be promoted via word of mouth amongst the community for whose benefit any such society has been established. As at 31 December 2014, South Africa had 201 registered friendly societies. Societies may offer insurance without registering under the insurance act, provided the policy benefits do not exceed R7500. Similarly, financial cooperatives registered under the Cooperatives Act (14 of 2005) are permitted to offer insurance, provided they fulfil the onerous requirement of registering as a short or long-term insurer under the relevant Act. Effectively, this necessitates that the cooperative would convert to a public company, thus undermining the intent of the Act to facilitate the delivery of financial services by cooperatives.
The Broad-Based Black Economic Empowerment Act (64 of 2013) is a government policy that seeks to advance the economic participation and enhance the economic participation of the previously disadvantaged population in South Africa. The Financial Sector Charter Council is a non-profit organisation constituted in terms of the Financial Sector Code, a facet of the BBBEE Act and is mandated with transformation of the financial sector and deepening financial access to the low-income segment of the market. The Financial Sector Code sets specific access targets for insurance: “6% of the low-income population have effective access to short-term and 23% to long-term insurance by 2014”. In addition, the industry has committed to spending 0.2% of post-tax profits on consumer education. In response to the requirements of the Code, the insurance industry initiated Mzantsi and Zimele product standards to penetrate the low-income market. Despite research conducted by the FinMark Trust (2004) identifying significant risks as death of main income earner, death of household members, poverty in old age, illness preventing main income earner from working - the Zimele standards were only developed for funeral insurance, credit life, personal disability and pure life; other priorities areas identified such as retirement provision and health insurance and a savings product were not developed for various reasons.

Burial societies are a non-guaranteed risk pooling mechanism and as such fall beyond the scope of existing insurance legislation. The Co-operatives Act provides an institutional home for the societies, but as funeral insurance has proliferated the market so has the number of burial societies, raising concerns of fraud and improper risk management. Government has been spurred into action amid growing concerns of consumer abuse and a commitment under the Financial Sector Charter to remove regulatory barriers market development. The National Treasury (2011) proposed a comprehensive policy framework to encompass microinsurance underwriting and intermediation, consumer education and regulatory enforcement. The objective of the microinsurance regulatory framework was to lower barriers to entry and promote competition amongst providers, facilitate formalised provision amongst currently informal providers, enhance consumer protection and facilitate effective supervision and enforcement. It was envisaged that the regulatory framework would be incorporated into a Microinsurance Act and subordinate legislation. However, in 2013 government decided to “no longer pursue standalone microinsurance legislation, but rather to incorporate

10 Effective access is defined in terms of the distance to the nearest service point, the range of products and services available, their appropriateness to the needs of the low-income market and whether they are affordable priced and structured, and described to the customers in a manner that is simple and easily understandable.
11 SAIA, 2017, SAIA Guidelines for Consumer Financial Education Programmes
microinsurance provisions under the new financial sector regulatory structure to be implemented under the *Twin Peaks* framework, with several interim measures to start giving effect to microinsurance from 2014 onwards” (Endres, Ncube, Hougaard, and van As, 2014, p. iv). Consultations conducted by CENFRI with supply side actors in the insurance ecosystem revealed that the multitude of regulatory developments created uncertainty, disincentivised players and inhibits any strategic decision towards going down-market, increased complexity reduces the industry ability to plan and requires additional layers of compliance (which increased costs and thus reduce profitability). These regulatory reforms have culminated in the promulgation of the new South African Insurance Act (18 of 2017), which amongst other things, aims to provide a legal framework for the prudential regulation and supervision of insurance business that is consistent with the Constitution of the Republic of South Africa, repeal certain section of the Long Term Insurance Act and Short Term Insurance Act, as well as introducing a legal framework for microinsurance to promote financial inclusion (National Treasury, 2018). The reforms seek to address the inadequate coverage amongst the low-income bracket by providing opportunity for formal providers to extend product options beyond funeral cover – which has been the cornerstone of the microinsurance industry - to include health, agricultural, loss of income due to death or disability, legal and property cover. Even though it may be a while before the market is flooded with these new product types, the Act not only provides for further development of the microinsurance industry but empowers households to assume higher risks in pursuit of increasing welfare outcomes.

In the study of the landscape of microinsurance, Roth, McCord and Liber (2007), found that a major obstacle to the demand for microinsurance is ignorance about what insurance can and cannot do, coupled with a general mistrust from the consumer. In the case of South Africa, this is evidenced by the large number of unclaimed benefits from employer-mandated group life schemes as beneficiaries are either unaware that cover existence or are not knowledgeable about the claims procedure. Distribution continues to present a great challenge to achieve the required penetration for compliant products as well as commercial viability.

**Information Asymmetries**

A major obstacle to the supply and implementation of microinsurance is asymmetric information. Two challenges emanating from asymmetric information – adverse selection and moral hazard – affect the design of insurance schemes. Since the seminal work of Akerlof
(1970) on information asymmetries, there has been a profusion of empirical literature that argue that the failure of insurance programmes is due to adverse selection and moral hazard. (Ahsan et al., 1982; Skees and Reed, 1986; Chambers, 1989; Nelson and Loehman, 1987; Williams et al., 1993; Goodwin, 1993; Goodwin and Smith, 1996). The majority of these studies posit that the costs of monitoring behaviour, as well as the costs associated with obtaining accurate loss-risk information are prohibitively high. Furthermore, others argue that the “exorbitant cost of information constitutes a market condition, not a market failure, thus implying that government subsidization of insurance is not justified on social welfare grounds” (Miranda and Glauber, 1997, p. 206). In fact, Miranda et. al. (1997) argue that systematic risk, rather than asymmetric information, may pose a greater obstacle to the emergence of an independent private insurance industry. According to Miranda et. al. (1997), systematic risk induces significant correlation among individual farm yields and the lack of stochastic independence defeats the risk pooling mechanism and thus insurers are faced with a higher risk per premium. Furthermore, without adequate reinsurance or government subsidy programmes, insurers would pass the burden of the higher costs to households thus making insurance prohibitively expensive. The effect of asymmetric information is higher premiums and low participation rates; and government programmes would suffer high actuarial losses while fully private insurance programmes would simply be unviable. Thus, the contribution of systematic risk and asymmetric information to insurance market failure is a topic of further public policy exploration.

**Adverse Selection**

Adverse selection arises when individuals or households have better (either private or unobservable) information about the distribution of their losses than the insurer (Rothschild and Stiglitz, 1976). Asymmetric information results in adverse selection when the characteristics that affect the probability and size of the indemnity payments cannot be reflected in the insurance premium structure (Just et al., 1999). The classic manifestation of adverse selection in insurance programmes is the distortion of participation patterns in favour of high risk individuals, and efforts to improve participation rates by increasing rates often exacerbates the problem as low risk individuals drop coverage, thus leaving a smaller riskier pool under coverage (Goodwin, 2001). The typical method of preventing adverse selection is to limit coverage of the insurance or by not accepting persons with increased risks (Sturesson, 2015).
**Moral Hazard**

Moral hazard is the tendency of an insured individual to take less care in preventing a loss than an uninsured individual. Moral hazard occurs when the insured, without the knowledge of the insurer, changes behaviour after purchasing insurance in a manner that increases the probability of receiving an indemnity payment (Miranda et al., 1997; Goodwin, 2001). Moral hazard can typically be prevented through co-insurance (where the insured shares the loss with the insurer), deductibles or excess (where the insured pays a portion of the money when a claim is made), no claims bonuses (insurance premiums are reduced in relation to the number of years in which no claim is made) (Sturesson, 2015). The challenge of moral hazard in agriculture is minimised through index insurance – the insurance payout is linked to an index, a factor over which the farmer has no control over.

**2.3 Demand for Microinsurance: A Theoretical Framework**

The expected utility and effectiveness of expectation are two frequently used concepts in the analysis of consumer behaviour in relation to risk. The expected utility theory advanced by Von Neumann and Morgenstern (1944) assumes that utility is a concave function of wealth (namely, people are assumed to be inherently risk averse and exhibit diminishing marginal utility with respect to wealth). The implication is thus that household buy insurance to replace the uncertainty of incurring large financial losses with the certainty of making regular premium payments (Brown and Churchill, 1999; Frank, 2004). Contrarily Nyman (1998) argues that the motive for the purchase of insurance is not merely to insure against loss, but rather to attain a windfall of income should the insurable event occur – by purchasing insurance households transfer resources from low marginal utility to future states where marginal utility is high. Akotey (2015, p.34) infers that the theories advanced by both arguments on insurance have the following implications for low income household: “firstly, it replaces the uncertainty of future losses with the certainty of paying small premiums and secondly, households can claim additional income when the insured risk occurs.”

**2.3.1 Expected Utility**

Owing to uncertainty, consumers do not know in advance what the future outcome of an activity will be, therefore they aim to make those decisions that will maximise expected utility and attain greatest effectiveness. Where the insurance policy of an individual is represented by the function I = [ p, (1-p), w1, w2], where w1 and w2, respectively, refers to household
wealth when the risk occurs and when it does not occur; and p and (1-p) refers to the probability of w1 and w2; then expected utility for insurance is depicted as follows:

\[ E[U|p(1-p)]w1, w2] = pUw1 - (1 - p)Uw2 \]

Equation 1 can be summarised into equation 2 as follows:

\[ E[U(w1, w2)] = pU(w1) + (1-p)U(w2) \]

From the above equation, we can deduce that the expected utility function is the weighted average of utility under conditions of uncertainty.

2.3.2 Effectiveness of expectations
Where the insurance policy of an individual is represented by the function \( I = [p, (1-p), w1, w2] \), and the expected value of insurance is \( pw1 + (1-p)w2 \), we can observe that insurance expectations are the weighted average of wealth owned by the individual under the different results of the insured. Thus, the effectiveness of insurance expectation is represented by the function: \( U[pw1 + (1+p)w2] \)

2.3.3 Individual risk attitude
Attitudes towards risk are not only crucial for understanding economic behaviour, but they also influence household demand for insurance. Potential determinants of risk attitudes are linked to determinants of insurance demand and can include demographic, socio-economic and subjective variables. While certain individual characteristics - such as gender, age, level of education - have been found to influence whether one is risk-averse, risk neutral or a risk enthusiast; there are other correlated factors such as the household’s income generating opportunities and its position in the political economy (Moscardi et al., 1977). Gloede et al. (2012) posit that adverse shocks do not solely have a direct negative effect on households, but also have an indirect amplifying effect via changing risk attitude.

Households’ attitude towards risk affects their decision making and thus directly related to its wealth status. Unfavourable shocks do not solely increase risk aversion (Gloede et al., 2012), but they render households vulnerable to poverty, have long-lasting negative effects on development (Dercon, 2004; Elbers et al., 2007) and the amplifying effect contributes to the
persistence of poverty and consequently, the effects are relatively more devastating for low-income households.

2.4 Empirical Literature

Schumpeter was the first to posit the role of financial intermediaries in fund mobilization, risk management, technical innovation and growth. In his study of the role of financial intermediation and economic growth in five Sub-Saharan African countries between 1980 and 2000, Aziakpono (2003) found mixed evidence of financial intermediation in Botswana, weak evidence for Lesotho and Swaziland while there was strong evidence of the relevance of financial intermediation found in South Africa. The majority of studies on financial inclusion focus on the linkage between access to finance – through the credit channel – and economic development (King and Levine, 1993; Levine, 1997; Rajan and Zingales, 1998; Levine, 1999; Huang, 2005; Claessens, 2006). More recently, scholars have recognised that while financial deepening leads to increased investments and a subsequent rise in employment and income, managing risks is a critical aspect of mitigating poverty by reducing the poor’s vulnerability through the risk-pooling (ex-ante) and shock absorbing (ex-post) mechanisms. Studies investigating the role of insurance in the finance-growth nexus have found evidence of a causal relationship between insurance market activity and growth as the collection of insurance premium provides savings which can be channelled into investment in productive sectors (Arena, 2008; Hais and Sumegi, 2008; Outreville, 2011; Elango and Jones, 2011 Alhassan and Fiador, 2014).

In their literature review, Dercon et al. (2008) found that microinsurance services have a direct impact on the ex-post and ex-ante behaviours and decisions of households. The study further propagated that “the impact of microinsurance on consumption, assets or other dimensions of welfare (such as health, nutrition, school enrolment) is a useful indicator to investigating the role of microinsurance in allowing individuals to avoid further poverty and hardship” (Dercon et al., 2008, p.4). In a similar vein, the literature review by De Bock and Ontiveros (2013) concludes that while the effects of microinsurance are heterogeneous across studies, microinsurance seems to achieve markedly positive results under specific conditions; however, more systematic studies are required to precise those conditions under which the positive impacts occur. Furthermore, the study postulates that the precise conditions that prevail include product design adapted to the local context, giving particular attention to
implementation and distribution; offering high quality service is of extreme importance and offering precise information to beneficiaries to enable higher utilisation rates.

Through the construction of a structural dynamic model that incorporates the major characteristics of low-income agricultural environments, namely uncertain income, constraints on borrowing and the use of investment assets to generate income and consumption smoothing, Rosenzweig and Wolpin (1993) show that the availability of weather insurance has little effect on the well-being of Indian farmers; but that rather farmers needed improved access to credit. The study further suggests that this is “consistent with the almost universal resistance of farmers to unsubsidized insurance schemes, in part because of farmers' evident ability to insure a minimum level of consumption via informal arrangements and because of the importance of other risk factors” (Rosenzweig et al., 1993, p.242). Mosley (2009) studied the impact of microinsurance on poverty reduction found that the insured relied less on emergency borrowing and expenditure levels are more predictable and reliable; therefore, microinsurance has a direct impact on physical and human capital expenditures and borrowers’ loan repayments rates. Furthermore, policyholders perceived themselves to be less vulnerable than non-clients, hence were willing to adopt riskier technologies and ventures.

Utilising panel data to test the robustness of the Rosenzweig and Wolpin (1993) structural model of household behaviour under risk, Elbers et al. (2006) find that if households were given the option of adopting insurance, welfare gains might be positive. Nicola (2015, p.637) in her study of the potential of weather insurance to provide increased welfare gains found that while insurance may permit the adoption of riskier production methods and thus enhance welfare, “the interplay with other uninsured risks, the presence of liquidity constraints, basis risk, and the loading factor on the insurance premium may account for the low take-up that is often empirically observed”.

Zimmerman and Carter (2003) considered the response of households to income shocks depending on the number of assets. They observed that households above a certain asset threshold tended to focus on consumption smoothing (selling livestock to preserve consumption), while poorer households opted to focus on asset smoothing (holding onto their assets at the expense of consumption. Asset smoothing in this instance would result in poorer child health and nutrition outcomes; and the long-term effects of childhood stunting on
quality of life and productivity are well documented (Chang et al. 2002, World Bank 2006, de Onis and Branca, 2016).

Carter and Janzen (2013), investigate whether insurance can transfer risk in a manner that reduces the need for households to rely on costly coping mechanisms that undermine future productivity. The study analysed the impact of drought induced insurance pay-outs on consumption smoothing and asset protection among pastoralists in northern Kenya. Using Hansen’s (2000) threshold estimator to approximate the asset threshold at which optimal coping strategies bifurcate, the authors observed that when insurance is available households with asset holdings above the threshold are 64 percentage points less likely to sell assets; households with assets below the estimated threshold and most vulnerable to destabilisation of consumption were 43 percentage points less likely to sell assets, thus suggesting that insurance serves as asset protection during crises and avoid the harmful effects on human capital investments.

Similarly, Akotey (2015) utilising the Heckman sample selection, instrumental variable and treatment effect models evaluates the effect of microinsurance on asset accumulation and consumption smoothing among low-income households in Ghana. The study observed that microinsurance has a positive effect on household asset accumulation and is a better option for managing consumption smoothing among low-income households. This suggests that insurance prevents asset pawning and liquidation at sub-optimal prices and through the risk transfer mechanism, households are empowered to escape poverty and sustain welfare gains. Hamid et al. (2010), also argued that microinsurance significantly impacts household food sufficiency, however the positive influence on other welfare outcomes – ownership of non-land assets and rising above the poverty line - is not statistically significant in the short run.

Utilising a study sample of approximately 800 maize and groundnut farmers in Malawi, Gine and Yang (2009), sought to enquire whether the provision of insurance against production encourages farmers to take out loans to adopt new technology. The study randomly selected half of the farmers to be offered credit to purchase high-yielding hybrid maize and groundnut seeds, while the treatment group was offered a similar credit package but was also required to purchase an insurance policy that covered, either partially or fully, the loan in the event of poor rainfall. Take up of credit was 33 percent amongst farmers who were offered the uninsured loan, however take-up was 13 percentage points lower for farmers offered the
insured loan. The authors found suggestive evidence that a limited liability clause in the loan contract was the reason for reduced take up of the insured loan. Gine et al. (2009) observed that insured loan take-up was positively correlated with farmer education, income, and wealth, which may proxy for the individual's default costs; whereas in contrast, the take-up of the uninsured loan was uncorrelated with these farmer characteristics.

By developing a model of a farmer’s investment decisions, Sturesson (2015) examined the relationship between microinsurance against weather related risks and the level of investment among insured farmers in Choma, Zambia. The study recognises that affordable insurance against economic loss is a key aspect of poverty eradication. The analysis finds a positive correlation between microinsurance and investment in farmland and new types of crops, thus supporting the narrative that farmers are more inclined to allocate resources into more productive assets when some risks are mitigated (Mobarak & Rosenzweig, 2012; Karlan et al., 2012; Cai et al., 2014; Cole et al., 2014). In their analysis of the impact of microinsurance on 215 households in the Philippines, Morsink et al. (2011) find that micro insurance reduces vulnerability and lowers the households’ probability of falling into the poverty trap.

Using the Heckman sample selection, instrumental variable and treatment effect models Akotey and Adjasi (2016) explored whether the combination of microcredit and microinsurance improves the wellbeing of low-income households. The study found that households could derive significant gains in terms of welfare improvement by utilising the combination of microcredit and microinsurance. Furthermore, the study asserts that the benefits of microcredit are sustained and enhanced if the poverty trapping risks are covered with microinsurance (Akotey & Adjasi, 2016).

2.5 Conclusion
This chapter provides an overview of the microinsurance market, summarises the characteristics of insurance and provides a synopsis of relevant theoretical and empirical literature on microinsurance in developing markets. It also discusses the role of adverse selection and moral hazard in the failure of crop insurance programmes and it is established that asymmetric information would lead to higher premiums and low participation rates; and government supported insurance programmes would suffer high actuarial losses while fully private insurance programmes would simply not be feasible. Although index based insurance schemes reduce transaction costs and eliminate the challenges of asymmetric information, a
major shortcoming is distorted indemnity payments: where the insured experienced losses but no payment is received as the index was not triggered, or indemnity payments are triggered where the insured has not incurred any loss.

The theoretical framework posits that insurance demand is influenced by many factors and subject to affordability constraints. As individuals are not predisposed to voluntary choose insurance, any efforts to stimulate demand needs the collaborative participation of government and the insurance sector. The empirical literature recognises that insurance is pertinent for preventing economic loss, deterioration of welfare gains and eradicating poverty. Despite the limited effectiveness of informal coping mechanisms against major catastrophes, subdued uptake of microinsurance is not only the lack of a perceived immediate tangible financial benefit, but the cumbersome claims determination and payment process. There is sufficient evidence suggesting that the insured value insurance schemes with frequent payouts and timeous settlement of claims.

In view of the body of knowledge reviewed, findings on the impact of insurance on welfare are varied. This study seeks to address the limited empirical evidence on the impact of microinsurance on low income households within the South African context.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This chapter examines the research methodology utilised in the empirical approach of this study. The chapter covers the research approach, data collection and choice of data that underlies the sampling approach. The chapter also covers a description of the sampling approach, provide a rationale for the data analysis methods and finally address the limitations presented by the study.

3.2 Data
This study made use of secondary data from the nation-wide household data collected by the FINMARK Trust – the FinScope Survey. The FinMark Trust is an independent trust that endeavours to make financial markets work for the poor through promoting financial inclusion and financial integration. The FinScope Survey is a nationally representative survey of how individuals source their income and how they manage their financial lives. The main objectives of the survey are to measure levels of financial inclusion, describe the landscape of access, to identify the drivers of, and barriers to, the usage of financial products and services as well as to stimulate evidence-based dialogue that will ultimately lead to effective public and private sector interventions in order to increase and deepen financial inclusion. (FinMark Trust, 2016). The survey provides insights into attitudes and perceptions regarding financial products and services, and incorporates an analysis of the demand, supply and regulatory environment in order to identify key barriers and opportunities to increased financial inclusion across savings, credit, payments and insurance.

The survey utilised stratified multi-stage random sampling comprising geographically enumerated areas (regions, urban and rural) and households to gather data from 5 000 households. The sample is drawn systematically utilising probability proportional to size (PPS) sampling and respondents are randomly selected from each sample enumerate area and individual respondents randomly selected from each sampled household using a Kish grid. The survey – conducted by TNS Research between 2 July and 14 September 2015 on behalf of FinMark Trust - adopted questionnaires and face-to-face interviews. The survey collected comprehensive data about households’ demographic features, asset ownership, economic conditions, social backgrounds, access to public infrastructure, financial status, financial
knowledge and risk management, perception about financial institutions and usage of financial products and remittances.

In terms of the overall access strand to financial services, the dataset contains four sub-sectors: (1) access to formal financial services (the banked, particularly commercial banks, stock markets, etc.); (2) access to other formal non-bank financial services; (3) access to only informal financial services; and (4) the financially excluded – they do not use any financial products/service (neither formal or informal). Households are however not precluded from involvement in more than one sub-sector to manage their financial lives. For the purposes of this study we have extracted the dataset concerning the thinly served (households that possess a non-optimised portfolio of financial products) and moderately served (households that possess a diversified product portfolio that is not yet optimised) as such our analysis is confined to households in the other formal, informal and no access sub-sectors of financial services utilisation. Unfortunately, insurance products lack sufficient observation to aid appropriate regression analysis. Notwithstanding, the aggregation will not adversely affect the analysis as the emphasis of this study is on comparing the insured and uninsured cohorts rather than assessing specific products.

3.3 Sampling
Sampling is a statistical process that involves the selection of a subset from a population for the purpose of making observations and drawing inferences about the population within resource, operational and cost constraints. The sampling frame of a survey defines its potential coverage; and it is typically based on the most recent population census, which aims to collect information about all the households and individual household members of the population (Deaton 1997). The sampling frame adopted by the FinScope survey was weighted and benchmarked to the Stats SA 2015 mid-year population estimates (FinMark Trust, 2016).

Probability sampling is characterised by each element of the population having a known chance of being selected and the sampling procedure involves a random selection at some point. Thus, in survey designs with equal probability, every element of the population has the same weight (Kish, 1965). Sampling weights are utilised to adjust the sample design and

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14 Ibid
improve the accuracy and representativeness of sample estimates where population elements do not have the same probability of selection. It is not uncommon for probabilities of inclusion in the sample to differ among households because some households are more costly to sample, others are likely to refuse to participate or where differential probabilities enhance precision. Unequal selection probabilities imply that households in the selected sample represent different numbers of households in the population, therefore design weights are utilised to adjust observations in the sample to represent the target population (Deaton, 1997). Therefore, sample weights address the unequal probability of selection, nonresponse and post-stratification.

The validity of any survey depends on the statistical reliability of the sampling framework. The FinScope survey utilises a stratified multi-stage random sampling design. Multi-stage sample design necessitates a sampling frame for each stage of selection; and national population registries, like the census, provide sufficient variables for stratification, weighting and nonresponse bias analysis.

### 3.4 Research Approach and Strategy

Empirical literature investigating the impact of microinsurance has used survey data and to provide more rigorous evidence typically follow either an experimental or quasi-experimental approach (De Bock et al., 2013). In contrasting quantitative and qualitative research, Keele (2010, p.35) describes quantitative research as “formal, objective, deductive approach to problem solving and in contrast qualitative is more informal, subjective, inductive approach”.

A deductive approach is more suited for the purposes of this study as it is aimed at theory testing rather than the exploratory, theory-building associated with an inductive approach. A quantitative research approach produces data that can be aggregated and analysed to describe and predict relationships, while a qualitative approach is beneficial to probe and explain those relationships; and explain the contextual differences in the quality of those relationships (Garbarino and Holland, 2009).

Ma (2012, p.1860) asserts that a quantitative approach is “based on observable facts (or data), is rid of subjectivity, and statistical methods and measures are rigorous because they do not depend on human interpretation”. According to Dercon et al. (2008), recent studies - (Gumber, 2001; Jütting, 2004; Jutting et al., 2004; Ranson, 2001; Smith and Sulzbach, 2008) - performed over the last decade have not controlled for the presence of unobservable
variables which may influence the decision of households to participate in insurance programmes and its outcomes. In contrast, others have used endogenous treatment effects (Imai et al., 2016, Seng, 2018), propensity score matching (Imai & Azam, 2012), and Heckman selection, treatment effect and instrument variable (IV) models (Akotey, 2015) with the purpose of accounting for endogeneity and selection bias so as to ensure the internal validity of the results. Unobservable variables such as beliefs, expectations and degrees of risk aversion play an important role in determining the decisions of economic agents (Krelle, 1997). This study has not controlled for unobservable variables because it is assumed that they are implicitly taken into account by their effects on the observable variables. The empirical strategy of this study analyses the effect of microinsurance on household welfare in terms of household income per capita.

3.4.1 Regression Model
This study models the impact of microinsurance on household welfare by using the multiple regression adopted by Ali Al-Shami (2017), with some modifications as specified by the equation below.

\[
\text{hhw}_i = \beta_0 + \beta_1 \text{misure}_i + \beta_2 \text{hhsize}_i + \beta_3 \text{geo}_i + \beta_4 \text{age}_i + \beta_5 \text{gender}_i + \beta_6 \text{mstatus}_i + \beta_7 \text{ndeps}_i + \beta_8 \text{edu}_i + \beta_9 \text{emplstat}_i + \beta_{10} \text{ownhome}_i + \epsilon_i
\]

where \( \text{hhw}_i \) denotes household welfare measured as household income per capita of respondent \( i \), used as a proxy for household welfare; \( \text{misure}_i \) is a dummy variable which equates to 1 if respondent \( i \) has a microinsurance policy and zero otherwise; \( \text{hhsize}_i \), \( \text{geo}_i \), \( \text{age}_i \), \( \text{gender}_i \), \( \text{mstatus}_i \), \( \text{ndeps}_i \), \( \text{edu}_i \), \( \text{emplstat}_i \), and \( \text{ownhome}_i \) represent the household size, geographical location, age, gender, marital status, number of dependents, educational level, employment status and home ownership respectively.

3.4.2 Description of variables
This section discusses the welfare measures which form the dependent variables of the study and the estimation approach. The majority of studies investigating the determinants of poverty and household welfare include the use of the following variables: age of the head of the household, gender of the head of the household, marital status, households whose heads are cohabiting, households headed by separated couples, households whose head are never
married, employment status, education level and other household characteristics – household size, dependency ratio – as well as geographical factors pertaining to location – rural, urban and so forth. The economic theory on the variables examined in the regression model for this study is discussed below; as well as their expected influence on welfare based on available literature.

3.4.2.1 Household Welfare: Household income per capita
Consumption or income are typically utilised as a proxy for the measurement of welfare. The wealth index has demonstrably been considered theoretically and practically a superior measure of economic status compared to income and consumption (Rustein and Johnson 2004). “Wealth better reflects long-term welfare as it is less volatile than both income and consumption; it is considered more suitable to analyse multi-dimensional poverty (Filmer and Pritchett, 1999; Filmer and Pritchett, 2001); and finally it is less data intensive and therefore easier to calculate (Sahn and Stifel, 2000; 2003; Azzarri et al., 2006)”15. Notwithstanding, the wealth index – as most commonly constructed – has been found to have an urban bias and limited discriminatory power at the lower end of the wealth distribution (Filmer and Pritchett, 2001; Rutstein, 2008; Howe et al., 2010) and as such would be wholly inadequate for the purposes of this study. There are numerous indicators for performing welfare analysis, and this study has chosen household income per capita.

Household income was constructed as monthly household income from various sources – employment income, business earnings, farm income, and remittances. In line with Al-Shami et al. (2017), the ratio of household income to number of household dependents (household income per capita) was used as the proxy for household welfare. It is expected that high household income reflects improved household welfare. This is supported by findings by Mahjabeen (2008), whose research shows that access to financial service is correlated with rising household incomes and consumption levels, as well as less severe income inequality and enhanced welfare.

3.4.2.2 Microinsurance
Uninsured risk has substantial welfare costs in terms of perpetuating poverty (Dercon, 2004). Economic shocks can be individual specific (illness, theft, unemployment) or economy wide (recession, drought, etc); and these shocks can be especially detrimental for households in

developing countries, with effects in the short term (on consumption and income), as well as the long term (loss of asset efficiency, risk-induced poverty traps). For this study, it is expected that microinsurance will have significant positive welfare benefits for households. This is in line with findings by Janzen & Carter (2013) and Akotey (2015), who observed that microinsurance has positive welfare impacts in terms of asset accumulation, consumption smoothing and reduction of inequality. The microinsurance products covered in this study are life, hospital cash, credit life, funeral and medical aid. Generally, the product portfolio in the microinsurance segment of the market is dominated by credit life and funeral cover. Other policies include life cover, medical aid and hospital cashback plan.

Credit life insurance covers the consumer “in the event of their death, disability, terminal illness, unemployment, or other insurable risks that is likely to impair the consumer's ability to earn an income or pay their monthly instalments under a credit agreement”\(^{16}\). Credit insurance reduces risk for lenders, improves collateral for borrowers thus contributes to the effectiveness of the credit function thus enabling poor households to adopt riskier strategies to increase income and consumption, and accumulate assets; furthermore, it provides a transmission mechanism as it promotes financial and social stability. Akotey (2015) contends that the integration of microinsurance, such as credit life cover, into microcredit agreements has positive and significant impact on welfare as households are indemnified against the risk of involuntary liquidation of assets in order to repay loans.

Funeral cover is a term life insurance policy where the benefit can be in the form of a funeral service, a cash benefit that could be used towards funeral costs, or a combination of the two. Owing to its relative affordability, funeral insurance has high penetration with 7.6 million policyholders (compared to 14 million households) and demand continues to outstrip – in 2014 the insurance industry generated US$490.7 million in income compared to US$191.4 million in pay-outs\(^{17}\). The hospital cashback plan - not to be confused with a hospital plan which is a form of medical aid that covers the cost of in-hospital treatment - is a type of insurance that pays out a daily cash lump sum for time spent in a hospital. Cover is intended to compensate for the loss in income due to hospitalisation and utilised to cover non-medical daily living costs or to supplement household income for periods that one cannot work. South

\[^{16}\] “Understanding Credit Life Insurance” [Web log message] Retrieved from https://www.switch2.co.za/blogs/blog/UNDERSTANDING-CREDIT-LIFE-INSURANCE-?cv=1

\[^{17}\] Van der Waal, C. (2014). “Why South Africa’s funeral insurance industry is growing rapidly”
Africa has a fragmented healthcare system and greater coverage and benefits leaning towards high income earners employed in the formal sector. While private health insurance accounts for 44% of total healthcare financing, it covers only 16% of the population with the rest of the population dependent on public healthcare provision funded by government tax revenues. The National Health Insurance (NHI) Fund proposes a state-run financing system for healthcare services, offering universal coverage to all South Africans irrespective of socio-economic status and provide a solution to the inequity in healthcare expenditure between the private and public sector.

3.4.2.3 Age
Ayoade and Adeola, (2012) found there was a significant relationship between age and effects on household poverty levels. These observations were echoed by Sekhampu (2013), who found that the age of the household head can significantly explain the probability of households falling into poverty. It is expected that the incidence of poverty is greater amongst households where the age of the household head is highest.

3.4.2.4 Gender
Biyase and Zwane (2018), provide evidence that the gender of the household head is a statistically significant determinant of household welfare; therefore, owing to the major disadvantages faced by female-headed households, especially in developing countries, it is expected that female-headed households are more likely to be poor than male-headed households. This is supported by findings from the literature review by Buvinic and Gupta (1997) where over 50% of studies found an overrepresentation of female-headed households among poor households. This contrasts with findings by Appleton (1996), in his study of female-headed households and household welfare in Uganda, that when assessed by consumption and income, female-headed households do not appear to be poorer than their male counterparts nor do they appear consistently disadvantaged on social indicators. The study further argues that simple comparison of the economic welfare based on the gender of the household head may mask other important gender dimensions (for example gender discrimination, lower education attainment levels among females, social or cultural norms that may inhibit the economic participation of women in relatively higher-return economic activities) in the determination of poverty.
3.4.2.5 Marital Status
A World Bank (2016) study on financial access and welfare in Mauritania, found that households headed by married people tended to include more children and were poorer than households headed by single people. On the contrary, Biyase and Zwane (2018) posit that the households headed by those who lived together, widowed and never married enjoy lower welfare. For the purposes of this study, it is expected that marital status is a statistically significant determinant of household welfare and that households, where the household head is married, will enjoy higher levels of economic welfare.

3.4.2.6 Household size
The majority of empirical literature posits that household size has a significant negative effect on poverty and the welfare status of households. In their study of financial access and household welfare in Mauritania, the World Bank (2016) found that household size is correlated with poverty, and the incidence of poverty increases directly with the number of household members. Studies conducted in Sub-Saharan Africa on the transmission mechanism between welfare and household size have differing views: Kamuzora et al. (1999) showed that there was a positive correlation between welfare and household size, i.e. larger-sized households tended to be less poor than others. On the contrary, Msiwomba et al. (2002) found considerable evidence of strong negative correlation between household size and household welfare – larger households are more prone to poverty than smaller households. In line with the majority of literature (Sekhampu, (2013); Gounder (2013) and Lekobane & Seleka (2017)), it is expected that larger households have a higher incidence of falling into poverty and lower economic welfare.

3.4.2.7 Educational Level
The incidence of poverty where the educational attainment of the household head was at the primary, secondary and/or tertiary level were less likely compared to households with “no schooling” (Kabubuo-Mariara (2002); Geda et al. (2005); Mok et al. (2007); Shete (2010); Edoumiekumo et al. (2014) and Isam et al. (2016)). Similarly, other studies (Datt & Jolliffe (2005); Litchfield & McGregor, (2008); (Gounder, 2012); Lekobane & Seleka (2017)) also conclude that higher levels of education tend to improve household welfare. Mensah et al. (2014) postulates a nonlinear relationship such that at lower levels of education returns to welfare are negative and beyond a given threshold education is expected to show a positive and significant impact on welfare, ceteris paribus. Proponents that level of education are
insignificant argue that it’s not the level of formal education, but rather financial literacy -the ability of the individual to perceive the benefits of the financial service or product – in this case the microinsurance’s benefits of risk-pooling and mitigating against the risk of unexpected future cash outflows which may leave the individual financially vulnerable (Akotey, 2011). For the purposes of this study, it is expected that educational attainment and skills training will have a positive effect on the quality of decision making and livelihood formation.

3.4.2.8 Location
Several studies postulate that rural dwellers are unambiguously disadvantaged in terms of acquisition of critical assets for welfare enhancement (see Sahn & Stifel, 2003; Ravallion et al., 2007; Booyse et al., 2008; Echevin, 2011). Biyase and Zwane (2018) concur with previous research that households in urban areas are less likely to be poverty stricken that households in rural areas. Thus, it is therefore expected that rural households may have lower economic welfare owing to lower asset levels, high asset inequality and poor smoothing of consumption.

3.4.2.9 Employment Status
Numerous studies indicate the positive correlation between employment and welfare effects on the poor. Mollers and Buchenrieder (2012) posit that for rural households, alternative (non-farm) sources of income are critical to ease poverty, economic vulnerability and income inequality – essentially, while small and poorer farms are heavily dependent on agricultural income, rural non-farm income is needed to sustain household welfare. Similar to findings by Ozughalu and Ogwunike (2012) in their study of employment status and poverty incidence in Nigeria, we expect that employment status and nature of employment of the household head have a significant impact on household welfare.

3.4.2.10 Own Home
Historically, housing has been viewed as one of the major determinants of welfare as it has a direct bearing on the standard of living achieved by households. “The principles underlying the asset-based approach to welfare is that households, rather than relying on state managed social transfers to counter the risks of poverty, individuals accept greater responsibility for their own welfare needs by investing in financial products and property assets which augment
in value over time\textsuperscript{18}(Doling, et al., 2010, p.165). Doling \textit{et al.} (2010) posit that these assets can be tapped into to augment household consumption and welfare needs during periods of shock where household income is reduced and counter the risk of poverty. Despite findings by Gale \textit{et al.} (2009) that the social benefits of home-ownership among low-income households where inconclusive, it is expected that the tenure status of low-income households, especially those in rural areas, will have a positive effect on welfare.

Table 3.1: Description of variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Symbol</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household Welfare</td>
<td>HHW</td>
<td>Income per household size (R’000)</td>
</tr>
<tr>
<td><strong>Microinsurance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life Cover</td>
<td>LC</td>
<td>Equals 1 if individual has Life cover, otherwise zero (0)</td>
</tr>
<tr>
<td>Hospital Cash</td>
<td>HC</td>
<td>Equals 1 if individual has Hospital Cash, otherwise zero (0)</td>
</tr>
<tr>
<td>Credit Life</td>
<td>CL</td>
<td>Equals 1 if individual has Credit Life otherwise zero (0)</td>
</tr>
<tr>
<td>Funeral Cover</td>
<td>FC</td>
<td>Equals 1 if individual has Funeral Cover otherwise zero (0)</td>
</tr>
<tr>
<td>Medical Aid</td>
<td>MA</td>
<td>Equals 1 if individual has Medical Aid otherwise zero (0)</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household size</td>
<td>HHSIZE</td>
<td>Total number of household members</td>
</tr>
<tr>
<td>Geographical area</td>
<td>GEO</td>
<td>Geographical location of the household, defined as 0 for peri-urban, 1 for Urban Households and 2 for Rural Households</td>
</tr>
<tr>
<td>Age</td>
<td>AGE</td>
<td>Age of respondent in years</td>
</tr>
<tr>
<td>Gender</td>
<td>GENDER</td>
<td>Gender of the respondent, 1 for Females and 0 otherwise</td>
</tr>
<tr>
<td>Marital status</td>
<td>MSTATUS</td>
<td>Marital status of the respondent, 1 for Married and 0 otherwise</td>
</tr>
<tr>
<td>No of Dependents</td>
<td>NDEPS</td>
<td>Number of dependants in household</td>
</tr>
<tr>
<td>Level of Education</td>
<td>EDU</td>
<td>Level of education of the respondent, 1 for Primary Education, 2 for Secondary Education, 3 for Post-Secondary Education and 0 otherwise</td>
</tr>
<tr>
<td>Employment Status</td>
<td>EMPLSTATUS</td>
<td>Employment status of the respondent, 1 for Unemployed, 2 for Retired and 0 otherwise</td>
</tr>
<tr>
<td>Own Home</td>
<td>OWNHOME</td>
<td>Respondent owns property asset, 1 for home ownership and 0 otherwise</td>
</tr>
</tbody>
</table>

3.4.3 \textbf{Estimation Approach}

Owing to the widespread use and availability of microinsurance in South Africa, utilising a pure control group and a group assigned microinsurance treatment – would not be feasible. Previous studies on the determinants of poverty and household welfare (Malik, 1996; Naude, 2002; Mukherjee and Benson, 2003; Datt and Jolliffe, 2005; Serumaga-Zake and Geda et al.,

2005; Mok et al., 2007; Akerele and Adewuyi (2011); Edoumiekumo et al., 2013 and Edoumiekumo et al., 2014) have relied on ordinary least squares (OLS) and probit models. One of the most widely used algorithms is the ordinary least squares regression analysis owing to firstly, the simplicity of operation and secondly, the integrity of data use because the entire elements of diverse scales in a sample are taken into account (Chen, 2015). The simple linear regression is represented by the equation below:

\[ Y = \alpha + \beta_j X + n_j \] 

where Y is the dependent variable (household income per capita for households), \( \beta \) is a vector of parameters, X is a set of independent variables (various household characteristics) and \( n_j \) is a random error term which is assumed to be normally distributed.

### 3.5 Limitations

Sampling error may arise as a sample is used instead of the whole population. The survey may be subject to selection bias, due to the sample frame not adequately capturing some part of the target population. Non-randomly selected samples from a target population, may give rise to sample selection bias, such that the sample is not representative of the whole population. The non-random sampling approach and the subsequent sampling of low-income households performed by this study may result in findings that are biased and not representative of the whole South African population.

The nature of financial service provision is that households elect to purchase insurance products; thus, their decision creates self-selection and endogeneity bias which may blur the impact assessment of microinsurance. Selection bias is a distortion in a measure of association due to a sample selection that does not accurately reflect the target population. Heckman (1979) advances two reasons for sample selection bias, (1) self-selection by the individuals or data units being investigated, (2) selection decisions during analysis or data processing procedures that have the same effect on structural estimates as self-selection.

Impact evaluations involve the use of estimation techniques such as Heckman sample selection, instrumental variables (direct-2SLS, IVprobit and probit_2SLS) and OLS – with some models producing results that are more consistent and robust than others. The
shortcomings of OLS mainly manifest in two aspects. One is that data and variables must be independent of one another, and the other is that the results are sensitive to outliers. The OLS model does not address the challenges of endogeneity and selection biases. In the absence of a randomised treatment assignment, selection bias and endogeneity problems can distort effective impact assessment. Random assignment ensures that establishing causality is as easy as ascertaining correlation.
CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

The following chapter presents the research findings of the empirical investigation of microinsurance and household welfare in South Africa. The first section presents the descriptive statistics – the mean and standard errors of relevant variables used in the study. The second section presents the econometric results, and the econometric model used to measure the impact of microinsurance on household welfare is adapted from Al-Shami et al. (2017).

4.2.1 The descriptive statistic

Table 4.1 depicts a summary of the descriptive statistics of all the variables used in the regression model, presenting the mean and standard deviation – which highlights the degree of variability around the mean. Income per household size was used as a proxy for welfare and the mean household welfare is R303.386, with a very high variation exhibited by a standard deviation of R317.248 within a minimum and maximum range of R0.00017 and R999.99 respectively.

<table>
<thead>
<tr>
<th>Table 4.1: Descriptive statistics</th>
<th>Mean</th>
<th>Sd</th>
<th>Min</th>
<th>Max</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Household Welfare</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income per household size (R’000)</td>
<td>303.386</td>
<td>317.248</td>
<td>0.00017</td>
<td>999.999</td>
<td>5000</td>
</tr>
<tr>
<td><strong>Microinsurance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life Cover</td>
<td>0.163</td>
<td>0.369</td>
<td>0</td>
<td>1</td>
<td>5000</td>
</tr>
<tr>
<td>Hospital Cash</td>
<td>0.014</td>
<td>0.116</td>
<td>0</td>
<td>1</td>
<td>5000</td>
</tr>
<tr>
<td>Credit Life</td>
<td>0.964</td>
<td>0.187</td>
<td>0</td>
<td>1</td>
<td>5000</td>
</tr>
<tr>
<td>Funeral Cover</td>
<td>0.457</td>
<td>0.498</td>
<td>0</td>
<td>1</td>
<td>5000</td>
</tr>
<tr>
<td>Medical Aid</td>
<td>0.115</td>
<td>0.319</td>
<td>0</td>
<td>1</td>
<td>5000</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household size</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>24</td>
<td>5000</td>
</tr>
<tr>
<td>Geographical area</td>
<td>1</td>
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<td>1</td>
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<td>5000</td>
</tr>
<tr>
<td>Age</td>
<td>40</td>
<td>15</td>
<td>16</td>
<td>99</td>
<td>5000</td>
</tr>
<tr>
<td>Gender</td>
<td>1.55</td>
<td>0.50</td>
<td>1</td>
<td>2</td>
<td>5000</td>
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<tr>
<td>Marital status</td>
<td>0.374</td>
<td>0.484</td>
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<td>No of Dependents</td>
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<td>0</td>
<td>3</td>
<td>4550</td>
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<tr>
<td>Level of Education</td>
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<td>0</td>
<td>3</td>
<td>4989</td>
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<tr>
<td>Employment Status</td>
<td>1.57</td>
<td>0.68</td>
<td>1</td>
<td>3</td>
<td>4963</td>
</tr>
<tr>
<td>Own Home</td>
<td>0.537</td>
<td>0.499</td>
<td>0</td>
<td>1</td>
<td>5000</td>
</tr>
</tbody>
</table>

Source: Researchers estimate from Finscope data
The first panel presents a decomposition of microinsurance uptake among the different product types available in the market and takes the value 1 if the respondent has the product, otherwise zero (0). The results reveal that an overwhelming 96% of survey respondents report having some form of credit life insurance. The National Credit Act (NCA) permits that credit providers insist on mandatory credit life insurance as a form of collateral and the high uptake is not surprising as in most insistences the credit provider is the agent. High uptake in credit life insurance could also be due to the clear-cut nature of the loss event, thus making this type of microinsurance relatively straightforward to price, and mostly resistant to information asymmetry, fraud and other moral hazard.

Furthermore, the results reveal the mean usage for funeral cover is 45% and according to the FINSCOPE survey - 14% report to relying on burial societies, while 25% have some form of funeral cover from non-bank financial institutions. High penetration of funeral cover is due to its ease of distribution and the risk is easy to monitor thus impervious to moral hazard. Most of the funeral insurance providers have a waiting period (between 3-6 months) except in the case of accidental death and claims are usually verified by obtaining extensive support documentation. Among the African black populace of South Africa funerals mark the status of not only the deceased, but also the family within their communities and therefore, burials are elaborate and expensive hence contributing towards an insurance policy to cover funeral costs is part of the social norm (Case et al., 2013).

There is low usage in hospital cashback plans, life cover and medical aid. Survey responses reveal that the high proportion of non-users of insurance products is due to lack of financial literacy (survey respondents indicated that they either do not want insurance, do not need it, do not know nor understand its benefits and/or have never thought of it), issues of affordability (high premium costs hindering uptake of insurance) and generally low households income where insurance is competing with other consumption priorities like food, energy and transport. These sentiments are echoed by Browne and Kim (1993) in their investigation of factors that lead to variations in life insurance demand which include the dependency ratio, national income, government spending on social security, inflation and price of insurance. The neoclassical benchmark model argues that micro life insurance uptake increases with risk aversion, the prospect variability of life, initial wealth, and with the intensity for bequests (Giesbert, 2010). In her investigation of the correlates of households’ decision to take up a micro life insurance, Giesbert (2010) found evidence that confirms some
of the predictions of the benchmark model, but also postulates that the outstanding role of trust and social networks influences the probability of purchasing micro life insurance.

4.2.2 Test for Multicollinearity: Correlation Analysis

The strength of the relationship among the explanatory variables can influence the validity of the estimations. Multicollinearity refers to the linear relation between two or more variables and may cause difficulty with the reliability of estimates of the model parameters. The condition of multicollinearity exists where there is high, but not perfect, correlation between two or more explanatory variables (Wooldridge, 2012; Cameron and Trivedi, 2009). Different authors posit divergent arguments regarding how much correlation causes multicollinearity. Malhotra (2007) asserts that multicollinearity exists where the correlation coefficient among variables is greater than 0.75, while Kennedy (2008) argues that a coefficient above 0.7 could cause multicollinearity leading to inefficient estimation and less reliable. In contrast, Hair et al. (2006) posit that a correlation coefficient below 0.9 is unlikely to cause a serious multicollinearity problem. In order to test for multicollinearity and the robustness of the regression results, the correlation matrix is presented in Table 4.2. and depicts that collinearity between the variables is within acceptable norms and none of the variables are dropped from the empirical analysis.
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>8</th>
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<th>12</th>
<th>13</th>
<th>14</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>INCOMEH</td>
<td>1.00</td>
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</tr>
<tr>
<td>2.</td>
<td>LIFECOVER</td>
<td>0.070***</td>
<td>1.00</td>
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</tr>
<tr>
<td>3.</td>
<td>HOSPITALCASH</td>
<td>0.031**</td>
<td>0.182***</td>
<td>1.00</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>4.</td>
<td>CREDIT_LIFE</td>
<td>-0.018</td>
<td>-0.160***</td>
<td>-0.069***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5.</td>
<td>HAVEFUNERAL</td>
<td>-0.055***</td>
<td>0.246***</td>
<td>0.066***</td>
<td>-0.068***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>MEDICALAID</td>
<td>0.106***</td>
<td>0.523***</td>
<td>0.190***</td>
<td>-0.158***</td>
<td>0.177***</td>
<td>1.00</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>7.</td>
<td>HHSIZE</td>
<td>-0.445***</td>
<td>-0.110***</td>
<td>-0.039***</td>
<td>0.042***</td>
<td>-0.040***</td>
<td>-0.108***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>GEOAREA</td>
<td>-0.112***</td>
<td>-0.170***</td>
<td>-0.050***</td>
<td>0.056***</td>
<td>-0.041***</td>
<td>-0.165***</td>
<td>0.053***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>AGE</td>
<td>-0.012</td>
<td>0.109***</td>
<td>0.032***</td>
<td>-0.094***</td>
<td>0.261***</td>
<td>0.104***</td>
<td>-0.110***</td>
<td>-0.022</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>GENDER</td>
<td>-0.113***</td>
<td>-0.062***</td>
<td>0.008</td>
<td>0.021</td>
<td>0.052***</td>
<td>-0.072***</td>
<td>0.098***</td>
<td>-0.007</td>
<td>0.089***</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>MSTATUS</td>
<td>-0.109***</td>
<td>0.212***</td>
<td>0.055***</td>
<td>-0.130***</td>
<td>0.173***</td>
<td>0.186***</td>
<td>0.081***</td>
<td>-0.089***</td>
<td>0.475***</td>
<td>-0.020</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>NO_OF_DEPES</td>
<td>-0.254***</td>
<td>0.061***</td>
<td>0.000</td>
<td>-0.005</td>
<td>0.177***</td>
<td>0.008</td>
<td>0.348***</td>
<td>0.059***</td>
<td>0.069***</td>
<td>0.039***</td>
<td>0.246***</td>
<td>1.00</td>
<td></td>
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</tr>
<tr>
<td>13.</td>
<td>EDU</td>
<td>0.160***</td>
<td>0.348***</td>
<td>0.120***</td>
<td>-0.114***</td>
<td>0.033***</td>
<td>0.370***</td>
<td>-0.115***</td>
<td>-0.276***</td>
<td>-0.165***</td>
<td>-0.088***</td>
<td>0.083***</td>
<td>0.058***</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>EMPLSTAT</td>
<td>-0.055***</td>
<td>-0.232***</td>
<td>-0.061***</td>
<td>0.026*</td>
<td>-0.094***</td>
<td>-0.187***</td>
<td>0.125***</td>
<td>0.090***</td>
<td>0.322***</td>
<td>0.174***</td>
<td>0.013</td>
<td>-0.133***</td>
<td>-0.280***</td>
<td>1.00</td>
</tr>
<tr>
<td>15.</td>
<td>OWNHOME</td>
<td>-0.076***</td>
<td>0.099***</td>
<td>0.050***</td>
<td>-0.037***</td>
<td>0.083***</td>
<td>0.081***</td>
<td>0.092***</td>
<td>0.010</td>
<td>0.292***</td>
<td>0.052***</td>
<td>0.261***</td>
<td>0.058***</td>
<td>0.010</td>
<td>1.038***</td>
</tr>
</tbody>
</table>

Note: ***, ** and * denotes significance at 1%, 5% and 10% respectively. Source: Author's estimate from Research Data.
4.2.3 The Regression results; Microinsurance and Welfare

The impact of microinsurance on household welfare is estimated using equation 1 and the results are presented in Table 4.3 below. The F-statistic which measures the overall significance of the estimated parameters is statistically significant (Prob>F = 0.0000), which implies that the estimated parameters are not jointly equal to zero, hence it is a good model. The R-squared of 0.1015 and Adjusted R-squared (which corrects for the sample size and the number of variables) of 0.0973 suggests that approximately 10% of household welfare is collectively explained by the independent variables for the sample.

Table 4.3: Regression results

| Dependent Variable: Household Welfare | Coef.  | Std. Err. | t     | P>|t| |
|--------------------------------------|--------|-----------|-------|-----|
| Constant                             | 11.091*** | 0.608     | 18.23 | 0.000 |
| **Microinsurance Usage**             |         |           |       |     |
| LifeCover_Yes                        | 0.357**  | 0.162     | 2.2   | 0.028 |
| HospitalCASH_Yes                     | -0.102  | 0.435     | -0.23 | 0.815 |
| CreditLife_Yes                       | -0.453* | 0.263     | -1.72 | 0.086 |
| FuneralCover_Yes                     | -0.388*** | 0.108 | -3.61 | 0.000 |
| MedicalAID_Yes                       | 0.392**  | 0.189     | 2.07  | 0.039 |
| **Control Variables**                |         |           |       |     |
| Household Size                       | -0.283*** | 0.031     | -9.04 | 0.000 |
| Age                                  | -0.003  | 0.005     | -0.56 | 0.577 |
| Dependents                           | -0.201*** | 0.048     | -4.16 | 0.000 |
| **Geographical Area (peri-urban)**   |         |           |       |     |
| Urban Households                     | -0.654*** | 0.142     | -4.59 | 0.000 |
| Rural Households                     | -1.271*** | 0.236     | -5.39 | 0.000 |
| Gender_Female                        | -0.386*** | 0.103     | -3.74 | 0.000 |
| Marital Status_Married              | 0.487*** | 0.121     | 4.01  | 0.000 |
| **Level of Education**               |         |           |       |     |
| Education Primary                    | 0.282   | 0.509     | 0.56  | 0.579 |
| Education Secondary                  | 1.318*** | 0.485     | 2.72  | 0.007 |
| Education Post-Secondary             | 1.828*** | 0.508     | 3.6   | 0.000 |
| EmplStat_Unemployed                  | 0.328**  | 0.127     | 2.58  | 0.010 |
| EmplStat_Retired                     | -0.528** | 0.234     | -2.26 | 0.024 |
| OwnHome_Yes                          | 0.136   | 0.106     | 1.28  | 0.199 |
| F(18, 3865)                          | 24.26   |           |       |     |
| Prob > F                             | 0.000   |           |       |     |
| R-squared                            | 0.1015  |           |       |     |
| Adj R-squared                        | 0.0973  |           |       |     |
| Root MSE                             | 3.0731  |           |       |     |
| Observations                         | 3,884   |           |       |     |

*Note: ***. ** and * denotes significance at 1%, 5% and 10% respectively. Estimated errors are heteroskedastic consistent. Source: Authors estimate from Research Data*
Table 4.3 illustrates the different effects of the proxies microinsurance on household welfare. The results for the decomposition of microinsurance usage among the various insurance products are in line with existing empirical findings. First, the positive and statistically significant (5%) coefficients for life cover and medical aid indicate that their usage is associated with higher levels of household welfare. In their examination of the impact of health insurance on health outcomes, healthcare utilisation and nonmedical household consumption in Vietnam, Wagstaff and Pradhan (2005, p. ii) found that health insurance positively impacted health outcomes (positive influence on stunting and malnutrition) and reduces “annual out-of-pocket expenditures on health, and an increase in nonmedical household consumption, including food consumption but mostly non-food consumption”. As such, in line with similar studies (Janzen and Carter (2013), Morsink et al. (2011), Mosley (2009)) one can deduce that health insurance coverage significantly positively impacts poverty reduction. In his study of the impact of microinsurance on household asset accumulation Akotey (2015), asserts that medical insurance reduces the tendency of asset pawning and the liquidation of important household assets in order to raise funds for medical care and treatment. In the same study, Akotey (2015) commenting on the Livelihood Empowerment Against Poverty (LEAP) - a poverty reduction program in Ghana which provides social cash transfers to extremely poor households - opines that the inclusion of health insurance has been good, but gains would be substantial if the program integrated other microinsurance products.

Second, the coefficient of Funeral cover is observed to be negative and statistically significant at the 1% level, which suggests that increases in funeral cover result in a decrease in household income. Funeral insurance pays a fixed benefit on the death of a policyholder or insured individual. Ordinarily, funeral cover is solely for funeral costs and does not increase household income. However, one may argue that funeral cover permits ‘ex-post risk management’ as it protects against the vulnerability of falling into poverty and implicitly stabilises household welfare as it provides future security in the event of adverse shock as households are protected from the ruinous consequences of death (namely, forced to borrow, sell off assets and/or forgo meals in order to cover funeral costs); therefore, funeral cover has the effect of stabilising consumption and frees resources for saving and investment. The negative correlation results is in contrast to previous studies which postulate that funeral costs significantly impacts the livelihood and financial stability of households and potentially could drive them deeper into poverty (Guha-Khasnobis et al. 2004); and conclude that funeral insurance has the potential to alleviate poverty by reducing the impact of unexpected financial
disruptions and stabilising household income (Patel, 2002; De Bock et al., 2012). The negative relationship observed in this study is potentially attributable to the fact that contribution to a funeral insurance policy diverts household income from immediate consumption and investment in revenue generating activities that would have positive welfare outcomes.

The results shown by credit life insurance are surprising and similarly at odds with expectation. The negative coefficient implies that an increase in credit life would yield a decrease in household welfare, but the p-value shows that this factor is not significant. This is a surprising finding as many empirical studies posit that credit life has a significant and positive effect on welfare. The finding in this study could potentially be due to the fact that credit life covers a specific line of credit and any pay-out or financial windfall is solely for settling the covered debt.

The characteristics of the household depict varying effects on household welfare. Household size and number of dependents are negative and statistically significant at the 1% level. This is consistent with the majority of empirical literature (Chamwali, 2000, Appleton, 1997, Rutasitara, 1999, Caldwell, 1977, Meillassoux, (1972, 1973) and Kamuzora, 1984) that have found that poverty is correlated with household size and increases directly with the number of household dependents. These findings are echoed by other studies that have found that a higher dependency ratio and household size have a significantly negative effect on the welfare status of households (Akerlele & Adewuyi, (2011); Litchfield and McGregor (2008) and Lekobane & Seleka (2017)). This suggests that, although poverty is complex and its causes varied, the demographics of household size and household composition make households vulnerable to poverty through reduced welfare. This is consistent with finding by Akotey (2015) that a higher number of dependants leads to lower asset build up and the presence of microinsurance reduces asset loss, promotes household’s asset growth and stability – thus enhancing welfare.

The coefficients for urban and rural households are negative and significant at 1%, which indicates that households located in urban and rural households have lower welfare compared to peri-urban households. Geographical location negatively and significantly impacts on household welfare (indicator variable denoted by 1 for peri-urban, 2 for urban households and 3 for rural households). This is not surprising as poverty is ubiquitous in rural areas and rural
household income per capita is generally lower compared to urban and peri-urban areas. According to StatsSA Living Conditions Survey, female-headed households constitute 41.36% of national households. A significant and negative coefficient is observed for gender, suggesting that households headed by females are more vulnerable to poverty or interpreted differently – male-headed households are better off than female-headed households. This is consistent with other studies (Barros et al., 1997; World Bank, 1991) that have found that the welfare status of male-headed households is much better off than female-headed households. Marital status is positive and statistically significant at the 1% level which suggests that the dual income of households with married people leads to higher levels of welfare.

The coefficients of Secondary and Post-Secondary Education are observed to be positive and statistically significant at the 1% level, consistent with the majority of studies (Mutherjee & Benson, 2003; Gounder, 2012; Litchfield & McGregor, 2008; Lekobane & Seleka 2017; Quartey and Blankson, 2004; Datt and Jolliffe, 2005; Akerele and Adewuyi, 2011) that have observed that higher levels of education tend to improve household welfare. This is not surprising as educational attainment is linked to higher income per capita and the effective use of financial services\(^{19}\) and therefore results in improved welfare gains.

Unemployment usually leads to grossly insufficient income which in turn leads to inadequate consumption and/or expenditure and lower level of welfare. The results show that employment status “retired” is inversely related to household income, while “unemployed” is positively correlated with household welfare. This implies that, compared with employed household head, households where the household head is unemployed experience higher level of welfare, which is inconsistent with expectations since employed household head has the benefit of earning meaningful income and thus escape poverty and experience higher welfare levels. This surprising finding is potentially due to the extensive social security spending undertaken by the South African government, which effectively provides a replacement for household income. However, households with retired heads have lower welfare compared with employed household head. On aggregate, households that own a home are less likely to be poor and have higher levels of welfare, but the results depict that home ownership is not statistically significant.

\(^{19}\) Lusardi and Mitchell, (2014); Jappelli and Padula (2011) as cited in Nanziri, E.L. (2016) quoting who posits that if education is lacking, use of financial services is mostly transactional (for consumption) rather than credit and insurance; and usage for wealth accumulation (saving and investment) is almost negligible. This is line with the findings of the 2015 FINSOPE Survey which found that access to transactional financial products was 92% compared to 54%, 57% and 35% for credit, insurance and investment respectively.
CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
The resounding success of microcredit and its demonstrated ability to reduce poverty has invariably resulted in the rapid expansion of microinsurance in the developing world. There is an abundance of empirical work on the role of microinsurance and its role in supporting economic growth, its ability to facilitate effective risk management for poor households, reduce vulnerability to poverty due to adverse shocks. The majority of studies on microinsurance, however focus on factors that influence uptake and very little has been investigated in terms of its impact. This chapter concludes the study on how the usage of microinsurance products impacts household welfare in South Africa.

5.2 Summary and conclusion of the study
The study investigated the impact of microinsurance on the household welfare in South Africa using the 2015 FINSCOPE household survey conducted by the Finmark Trust, which seeks to describe the landscape of access, measure levels of financial inclusion, identify the drivers of, as well as barriers to, the usage of financial products and services. The decomposition results show that credit life and funeral cover are the most proliferate insurance products in the market, while the penetration of medical aid (health insurance) and life cover is significantly low. Despite health insurance demonstrating a significantly positive influence on welfare, the low uptake could be attributable to socio-demographic characteristics such as age, gender, education level and household size. As discussed in the previous chapter, private health insurance remains relatively expensive and out of reach of many household incomes. Public service provision in the health sector that offers free universal coverage, is a deterrent from many households investing in health care cover.

The low uptake of life cover is potentially due to affordability, low household incomes and lack of generational wealth for the majority of the population thus a low intensity to bequeath. However, private life insurance remains imperative as it can substitute, or augment social benefits provides by government; as evidenced by a significant negative correlation between social welfare spending and life insurance premiums. The high penetration of credit life is attributable to the fact that it is mandatory for the majority of credit agreements in South
Africa. In addition, it is immensely beneficial as it minimises the rate of default of households and thus indemnifies lenders against losses from bad debt and also promotes financial inclusion by facilitating the release of more finance to low income household.

Furthermore, we found that marital status and educational attainment of the household head (secondary and post-secondary) are positive and statistically significant determinants of household welfare. Moreover, this study observed that household size, number of dependents, gender of the household head is female and geographical location exerts a negative and significant impact on household welfare.

5.3 Policy Implications of findings
The issue of improving household welfare will remain on the South African economic policy agenda for years to come owing to increased incidence of poverty, the severity of household poverty, low household incomes and jobless economic growth. The findings offer several policy recommendations on how microinsurance can be utilised as a mechanism to eliminate certain types of poverty traps. Firstly, the creation of uniquely designed products and distribution systems that promote greater insurance inclusion for low-income households is imperative. These households are unlikely to gain access to these products through their employment and in order to maximise their welfare, they have often opted for informal products that offer flexibility and diversity that is absent in the conventional insurance market. Therefore, government intervention in the market is required to ensure affordability and that product purchases are matched to the risk faced by households.

Secondly, the government has done incredible work in terms of consumer protection in South Africa, however financial literacy still lags behind. Owing to the positive correlation between financial outcomes and financial literacy, government should embark or incentive a financial education strategy that is specific to the socio-demographics and economic characteristics of low-income households.

5.4 Recommendations for future research
This study contributes to the empirical investigation of the welfare benefits of microinsurance. The research approach, findings, and recommendations presented by this study could be used as a basis to further investigate the welfare benefits of microinsurance. In addition, the research limitation identified by this study as well as the research gaps could be addressed by future research. This study makes use of a non-random sampling approach.
which may result in biased, inconsistent estimates, which are not representative or
generalisable to the South African population. Furthermore, households mostly elect to
participate in insurance services and their decision can thus create self-selection and
endogeneity bias. Randomised treatment assignment, selection bias and endogeneity
problems could potentially distort effective impact assessment, and a more robust strategy
would be to correct through the use of appropriate instruments such as Instrumental Variable
(IV), Treatment Effect and Heckman sample selection.

The cost of microinsurance provision and deepening financial inclusion by providing access
to formal insurance market through designing unique products and distribution systems for
the low-income segment of the market are beyond the scope of this study. However, the
feasibility of any policy recommendation must be evaluated in the context of a cost-benefit
analysis that distinctly depicts that any government intervention to address this market failure
far outweighs the cost.
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