UNIVERSITY OF CAPE TOWN

New Economics of Venture Capitalism? Assessing the Role of Remittances on Household Entrepreneurship

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by

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Abstract

Remittance flows have often been considered a significant source of flow of foreign capital flows into African countries but are not often considered a key source of potential investment income for entrepreneurial activities and often have higher cost corridors in Southern Africa compared to other regions. This paper seeks to analyse the effects of remittance receipt on the likelihood to engage in household entrepreneurship in Malawi using cross sectional data from the Fifth Malawi Integrated Household Survey 2019-2020 covering 11,434 households. Analysis is made using a bivariate Probit estimation technique on overall households, as well as female-headed households, who often make up the majority of microenterprise owners and need capital to survive. By using household data, this study takes into account the behaviour of both formal and informal enterprises in a way that has not been assessed by previous studies. The study finds that when looking at overall households, the effects of remittances on household entrepreneurship is positive and significant, however the results lose significance when internet access as a control variable is utilised. For female headed households, remittance receipt is associated with a lower likelihood of engaging in entrepreneurial activities. This may suggest a deeper need to support female entrepreneurs with additional capital, to help their businesses thrive. There is a need to develop a better overarching conditions and capacity to help foster overall entrepreneurial pursuits.

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List of Abbreviations

AfCFTA: African Continental Free Trade Agreement

GCSE: General Certificate of Secondary Education:

GDP: Gross Domestic Product

IMF: International Monetary Fund

IOM: International Organisation for Migration

JCE: Junior Certificate of Education

MACRA: Malawi Communications Regulatory Authority

MoGCDSW: Ministry of Gender, Community Development and Social Welfare

MSCE: Malawi School Certificate of Education

MSMEs: Micro, Small and Medium-sized Enterprises

NELM: New Economics of Labour Migration

NGO: Non-Governmental Organisation

PSLC: Primary School Leaving Certificate

SADC: Southern African Development Community

SDG: Sustainable Development Goal

SMEs: Small and Medium-sized Enterprises

UNDP: United Nations Development Programme

Chapter 1: Introduction

1.1 Introduction and background of the study

Entrepreneurship is often seen as a core area of economic growth and development. This is particularly prevalent in the context of SMEs, which make up the majority of employment and income sources in both developing and developed markets (Muriithi, 2017). In Africa, the relationship between entrepreneurship and economic growth has also been quite notable, suggesting that African countries could be entrepreneurially driven (Adusei, 2016). However, despite this importance, much of Africa's entrepreneurial activities remain informal with finance gaps that limit their growth and survival (Fatoki, 2014). This brings in a lot of questions about alternative ways in which entrepreneurial ventures can be financed from an African perspective.

Malawi is one of the many developing countries whose economy consists of a large base of SMES and informal entrepreneurial activities. Formal employment in the country is only at 11%, with much of the unrecognised employment coming from the informal service and agriculture sector, which is the largest employer in the country (African Development Bank, 2018). There are a myriad of challenges facing Malawian informal businesses from formalising and growing, and these include general macroeconomic conditions, disrupted electricity supply, a lack of telecommunications infrastructure, as well as a lack of access to finance (African Development Bank, 2018). More recently, remittances have been looked at as a source of financing to developing countries, with inflows to the developing world growing from US$56 billion in 1995 to over US$334 billion as of 2010 (UNDP, 2015). In 2010, Malawi's remittance inflows stood at $22 Million, this figure has now grown to over $217 Million as of 2019 (World Bank, 2019). As an investment source for families and society, remittances have been found to lead to improvements in poverty alleviation, education, housing, and entrepreneurship (Adams, 2011). While remittances to Malawi are relatively smaller in relation to their counterparts, their inflows have increased substantially in recent years, which brings into focus their role as a potential source of financing for entrepreneurial activities.

Given Malawi's history as a predominantly labour exporting nation (Johnson, 2017), some forms of research have laid mention to the previous role of remittances and its impacts on households. However, this was prior to the availability of current forms of household data.

While macroeconomic research may show the effects of remittances in terms of financial development and its effect on pushing economic growth (Gupta et al., 2009), household data can allow researchers to investigate individual interactions with remittances using a more nuanced approach. Analysis of recent survey data may provide important insights into how remittances may be operating for entrepreneurial purposes, and what more can be done to better leverage these inflows for sustainable development.

1.2 Research Problem and Questions

While entrepreneurship is viewed as important for its role in driving the economy (Muriithi, 2017), access to finance and credit are often cited as major barriers to MSME growth in Africa and within Malawi (Fanta et al., 2017). In recognition of this, the Malawian government has taken steps to support entrepreneurs through their 2019 MSME policy. However, many entrepreneurs still come across a number of hurdles in becoming sustainable businesses (FinMark Trust, 2019). The policies so far have assisted in helping entrepreneurs find some form of support through government agencies and NGOs which offer loans, business coaching and other services. However, the vast majority of businesses consistently cite a lack debt funding, venture capital, and other financing sources as a major impediment to their development and creation (Ndala & Pelser, 2019).

Remittances tend to have varying effects within a developing country context, but are consistently found to be channelled towards household consumption (Taylor, 1999). While this is the case, remittances may sometimes act as a form of venture capital investment for migrant home countries (Vaaler, 2011). This is often the case, as migrants sending remittances to their home countries may also provide entrepreneurial mentoring to assist people back home due to their familiarity with the business environment (Chrysostome & Nkongolo-Bakenda, 2019). In the cases where state spending does not crowd out these investments, remittances can also be associated with a higher rate of new business creation (Vaaler, 2011). This is particularly important as the creation of well performing business can assist in directly addressing challenges of economic growth, poverty alleviation and if intentional enough, gender inequality in the context of sustainable development goals.

Member states of the African Union recently signed the Protocol of Free Movement of Persons, in accordance with the greater strategic objectives of the African Continental Free Trade Area (AfCFTA)(Nest, 2019). The signing and potential implementation of these agreements could

lead to an increased flow of migrant labour and human capital, as individuals look to work in areas where they may be deemed as more productive. This has the potential to allow for the witnessing increased levels of remittance flows as the protocol highlights the role of making the ease of transferring remittances and savings at a regional and continental level easier (Nest, 2019).

The proposed study seeks to understand how remittances can be used as a source of financing for entrepreneurship. While the role of remittances on development has been studied in the context of developing economies (Yavuz & Bahadir, 2021), this has not been extensively studied in the case of Africa, particularly at a household level. This has to do with a multitude of reasons, include the lack of availability of data to study these interactions (Adams, 2011). Moreso, evidence on the role of remittances has often varied and offered mixed results, suggesting that contextual analysis may be required (Naudé et al., 2017). Existing research on African studies has also tended to focus on outcomes such as poverty alleviation, health and education in relation to remittances (Adams & Cuecuecha, 2013), while other African studies taking into account entrepreneurial activities often do so in the context of return migration (Marchetta, 2012; Thomas & Inkpen, 2013; Wahba & Zenou, 2012). As a result, African research on remittances has so far has failed to properly take into account entrepreneurial activity necessitated by remittances. Household studies can be particularly important in this regard, as they may allow for the consideration of the informal economy (Elgin & Erturk, 2019). This is important as the informal economy is often overlooked in other forms of data, despite making up a large proportion of the African economy. This research aims to assess the role of remittances on entrepreneurship in the context of Malawi, with a clearer picture of how remittances may be operating within the African household context. This could help in pushing policies on how to make optimal use of remittance flows.

1.3 Research objectives and/or hypotheses

The primary objective underlying this research seeks to understand what role remittances have on financing entrepreneurial activities in Malawi. From this objective, the aim is to address the following research questions:

1. What is effect the receipt of remittances has on entrepreneurial activities?
2. Are female headed households more likely to engage in entrepreneurship when they receive remittances?

The proposed hypotheses based on these research questions are:

H_1: Remittance receipt is associated with a higher likelihood of being engaged in entrepreneurial activities.

H_2: Remittance receipt is associated with greater entrepreneurial engagement for female entrepreneurs.

1.4 Scope and Justification of the study

In the absence of the needed capital for business growth in the Malawian context, this study seeks to understand the role of remittances as an increasingly important source of development finance. As Malawi aims to achieve vision 2063 which aspires for Malawi to become an Upper middle-income country by 2063, the identification of possible private capital pools will be central to funding these development initiatives (National Planning Commission, 2020). As it stands, remittances can help researchers potentially understand the role of less expensive and less stringent financing sources through remittances on business activities, particularly in the context of Malawi's high domestic borrowing interest rates.

By assessing the role of remittances on women's entrepreneurship, researchers and policy makers may be able to gain a greater understanding as to how increased capital and resources may help aspiring business owners to grow beyond a certain size. This has been identified quite prominently in the case of Malawi where female owned businesses primarily consist of microenterprises (FinMark Trust, 2019). This is particularly important in the pursuit of gender equality from an entrepreneurial standpoint.

1.5 Organization of the study

The following study is made up of five chapters. Chapter 1 covers an introduction into the topic of remittances for development and entrepreneurship, while also outlining the problem statement. This chapter also discusses the research questions and their corresponding hypothesis. Chapter 2 consists of the literature review. This covers a brief background of migration and remittances in Malawi, and assesses the role of entrepreneurship and remittances in Malawi today. The theoretical framework surrounding remittances and entrepreneurship is discussed and empirical insights are analysed by looking at past studies involving remittances

and households. Chapter 3 focuses on the methodology of the study, by the research approach and design and discussing the chosen sample and data sources. This is followed by a description of the model specification and a discussion surrounding the chosen variables and how they will be measured. Chapter 5 consists of the study results; this begins with a discussion of the descriptive results of household variables followed by a presentation of the regression results. In Chapter 6, a conclusion and general summary of the study is made, followed by policy recommendations and implications.

Chapter 2: Literature Review

2.1 Introduction

The first part of this chapter provides an overview of the Malawi's migration history and a contextualisation of their changing remittance flows. An overview of Malawi's entrepreneurial landscape is also considered. In the second part of the chapter, the theoretical framework in relation to migration and remittances is discussed, followed by a review of empirical literature on remittances and its relationship with entrepreneurship.

2.2 Definition of Terms and Concepts

2.2.1 Remittances consist of household income from a foreign economy or country due to temporary or permanent movement of individuals to those countries. These consist of monetary flows through formal channels, such as electronic and wire transfers, as well as informal channels, such as through cash transfers over foreign borders (IMF, 2009).

2.2.2 Migration is defined as the act of moving away from your usual place of residence to another country or area within the same state (IOM, 2019). In this context, this is primarily focused on moving to another country moving to another country for the purposes of work.

2.2.3 Entrepreneurship can be defined in several ways. In this case, entrepreneurship is defined as the creation of a business or service while taking into account risk and uncertainty, in order to obtain a profit. This may also involve the application of innovative or creative means to address a gap in the market (Smith & Chimucheka, 2014). This will consist of all families or family members undertaking activities within their household that are entrepreneurial in nature. This may include selling farmed products for income.

2.2.4 MSMEs refer to micro, small and medium sized enterprises. The definition of which varies from country to country. In the case of Malawi, a micro-enterprise is made up of 1 to 4 employees. A small enterprise consists of 5 to 20 employees and medium enterprise comprises of 21 to 100 employees. Anything above 100 employees is considered a large enterprise (Ministry of Trade & Industy, 2012).

2.3 Overview of Context

2.3.1 Migration History

To understand the potential role of remittances within the Malawian context, one must understand the key changes in Malawi's migration dynamics and how this could potentially affect remittance recipients. Despite current statistics indicating lower numbers in comparison to some of its neighbours, migration has played quite a significant role in the lives of rural and urban Malawians (Johnson, 2017). Historically, Malawi was identified as a strong labour-sending country, which was a result of the need for mine workers in South Africa during much of the 20th Century. Alongside these changes in migration, came the influence of remittances that were funnelled back to rural areas within Malawi. These were identified as having significant impacts on assisting households in terms of food security, investments in housing and education and acting as sources of start-up capital for entrepreneurship (Johnson, 2017). By 1972, remittances accounted for 7 percent of GDP and made up 35 percent of Malawi's total exports (Record & Mohiddin, 2006).

While being the largest labour supplier to South Africa during the 1970s (Andersson, 2006), a plane crash in 1974 led to a national ban on labour recruitment by then President Dr Hastings Kamuzu Banda (Johnson, 2017). This caused dramatic fall in labour recruitment in the country up until the ban was lifted a few years later, and was argued to have halted the process of rural accumulation of resources that was occurring at the time (Chirwa, 1995). Despite the change in policy, labour migration from Malawi did not return to its former levels, as mining sector conditions at the time necessitated cost cutting measures and layoffs that caused a further dwindle in migrant numbers. This was further exacerbated by the HIV/AIDS epidemic in the 1980s (Johnson, 2017).

As migration efforts for work in South African mines occurred with government assistance, parallel informal migration networks initiated by migrants and their family's migration were also forming during this time (McCracken, 2012). These were often initiated through various forms of social networks that led to Malawians working in agriculture, trade, and service sectors within the South African economy. In addition to mine work, by the turn of the millennium, labour migration had also been common amongst skilled professionals. This was led primarily by the migration of medical professionals to other countries such as the United Kingdom (Record & Mohiddin, 2006). Currently, around 22 percent of Malawi's tertiary educated individuals emigrate to other countries, which constitutes as one of the highest tertiary

emigration rates in the world (World Bank, 2016). This is the state of labour migration out of Malawi today, as South Africa remains a destination for many of the residents that migrate out of the country with other skilled professionals moving to other parts of the world.

2.3.2 Contextualising Malawi's Remittance Flows

In recent years remittances flows into Malawi have been increasing. While the Covid-19 pandemic did dampen remittance flows from US$268 Million in 2019 to US$215 Million in 2020, these are still relatively high to remittance flows from the past two decades (World Bank, 2019). Malawi's economic growth fell to 1.7% in 2020 from 5.7% as a result of the effects of the Covid-19 pandemic (African Development Bank, 2021). Much of Malawi's economy relies on agricultural activities that are heavily supported by Government subsidy programmes (Wolrd Bank, 2021). Being a landlocked country, Malawi's economy also greatly relies on regional integration and trade activities with neighbouring countries (African Development Bank, 2018). Over the course of two and a half decades, GDP per capita grew from roughly $228 982 in 1994 to $378 831in 2020. For the most part, this was a period of positive growth barring a 3-year period of negative growth from 2000 to 2003, as well as negative growth in 2001, with the highest negative growth -7.33% in 2012, 2016 and 2020. The highest negative growth was -7.33% in 2001.

Table 1 - Stylized Facts on Remittance Inflows to Malawi

Year	Personal remittances, received (US$)	GDP per capita (US$)	GDP per capita growth (annual %)
1994	766 905.84	228 982.02	(10.57)
1995	523 432.03	264 607.55	15.56
1996	647 354.19	278 914.56	5.41
1997	744 944.64	282 663.79	1.34
1998	746 886.72	285 674.76	1.07
1999	746 883.91	286 176.18	0.18
2000	746 886.21	283 009.84	(1.11)
2001	746 885.97	262 266.93	(7.33)
2002	843 693.59	260 311.90	(0.75)
2003	13 912 158.80	268 594.45	3.18
2004	18 321 016.40	276 210.38	2.84
2005	22 531 879.49	277 916.75	0.62
2006	14 789 977.69	283 179.52	1.89
2007	21 013 521.96	301 801.46	6.58
2008	16 674 296.96	315 721.80	4.61
2009	16 656 710.07	332 325.89	5.26
2010	21 767 663.62	345 119.43	3.85
2011	25 320 230.69	351 652.98	1.89
2012	28 303 298.99	348 187.24	(0.99)
2013	34 132 322.31	356 041.93	2.26
2014	38 487 169.24	365 933.92	2.78
2015	41 493 977.04	365 941.62	0.00
2016	39 053 133.13	365 006.04	(0.26)
2017	78 392 829.79	369 618.15	1.26
2018	181 067 327.48	375 790.89	1.67
2019	268 194 658.34	385 936.54	2.70
2020	215 397 930.59	378 831.58	(1.84)

Source: World Bank (2022)

2.3.3 Malawi's Entrepreneurial Landscape

The informal sector, primarily through agricultural activities, is the largest employer in Malawi. In terms of MSMEs, Malawi has an estimated 1.6 million MSMEs within the country with Medium Enterprises producing the highest annual turnover, while only making up 3% of MSMEs (FinMark Trust, 2019). When assessing this by business ownership, 51% of MSMEs are owned by males while the remaining 49% belong to females. Despite this balanced looking ownership structure, female business participation is lower the larger a business is. Microenterprises make up about two-thirds of MSMES, out of which 84% are owned by women. Once businesses become larger, female ownership becomes less apparent, indicating that many female entrepreneurs struggle to make it out of the start-up phase (FinMark Trust, 2019). This indicates that there is still a substantial gender imbalance in terms of ownership by size. Among the supply side hurdles facing businesses in the country, the most cited include infrastructure related issues in terms of electricity and water supply, poor transport networks, lack of access to credit, financing, and banking facilities. Microenterprises tend to have the lowest access to water, electricity and access to credit, with access to credit being as low a 6%. Close to 80% of businesses are in urban areas and only 10% of businesses report the use of formal credit and other financial mechanisms. The majority of which, fund through savings, salaries, liquidation of assets or friends and family (FinMark Trust, 2019).

Table 2 - Stylised Facts on MSMEs in Malawi

	Micro	Small	Medium	Total
Share of MSME Turnover	32%	29%	39%	100%
Total Annual Turnover ($)	5 023 768 221	4 543 254 764	6 242 449 621	15 809 472 606
Median Annual Turnover	1 972	9 863	123 287	135 122
Share of MSMEs (%)	74%	23%	3%	100%
Male Ownership (as share of Total MSMEs)	64%	30%	6%	100%
Female Ownership (as share of Total MSMEs)	84%	15%	1%	100%
Access to Water	60%	73%	78%	X
Access to Electricity	20%	43%	44%	X
Access to Formal Credit	6%	20%	26%	X

Note: Adapated from FinScope Malawi 2019 MSME Survey Report

2.4 Theoretical Framework: New Economics of Labour Migration (NELM)

There are varying theories that surround the motives behind remitting. These have traditionally been viewed through the lens of altruistic motivations, where migrants remit to take care of

individuals left behind. There are also self-interest motives in that migrants may remit as a means of ensuring that investments left behind are adequately taken care of (Taylor, 1999). For the purposes of this study, remittances will primarily be looked at through the lens of the New Economics of Labour Migration (NELM) theory that posits that motives around remitting involve mutually beneficial informal contracts between migrants and households. These contracts include the need to provide income and insurance for the household against income shocks and other uncertainties (Bloom & Stark, 1985). For instance, in the presence of drought and, then farmers in rural areas might be more likely to receive more remittances from migrant family members in urban areas. In the same way, urban migrants may also be insured against the uncertainty of illness or unemployment by knowing they have family that cake care of them in rural areas. In this way, remittances provide both self-interested and altruistic motives in the enforcement of this informal contract.

As a result of the credit constraints and market failures that may exist within the developing world, households use remittances (through migration) to find access to credit and insurance they otherwise would not have access to in their countries of origin. This makes remitting as a result of migration, a risk-mitigation and insurance strategy that will allow households to generate favourable incomes in comparison to others (Bloom & Stark, 1985). The NELM framework also makes claim to the possible effects of community benefits of remittances due to multiplier effects (Taylor, 1999). This is often the case for rural households, as household consumption may often favour greater demand for domestic products that may require greater labour production and minimal imports.

2.4.1 Remittances and Entrepreneurship: A Gendered perspective

A gendered view of remittances and entrepreneurship is not entirely new, but research from this area suggests that gendered social norms may play a part in the household decisions of remittances sent and received (Pickbourn, 2016). This is particularly relevant when you consider that migration and remittances may change the allocation of household expenditure according to the preferences of the remittance receiver and their corresponding bargaining power (Duflo & Udry, 2004; Göbel, 2013). As remittances act as a way to relax household budget constraints, a gendered view of remittance receipt can allow for the assessment of male and female decisions to engage in entrepreneurial activities based on their spending preferences

In both cases, remittances tend to be influenced by social norms (Pickbourn, 2016). For instance, some research indicates that female households are more likely to spend remittances on resources that benefit their family or fulfil family needs; such as food, health and education in comparison to men (Eversole & Johnson, 2014). Men have been more likely to channel remittances towards personal assets, however they may also channel remittances towards productive assets that they have inherited, such as land which is also governed my social norms (Pickbourn, 2016).

2.5 Review of Empirical Literature

The relationship between remittances and entrepreneurship is often met with controversy and mixed results (Adams, 2011; Amuedo-Dorantes & Pozo, 2006; Naudé et al., 2017). Most studies on remittances tend to focus on return migrant's savings and entrepreneurship, as this can allow for pre and post migration comparisons and usually includes a richer dataset (Rapoport & Docquier, 2006). Despite this shortfall in remittance specific research as well as the overall availability of household studies on remittances studies in the developing world, household studies can provide meaningful information on their effects that may not be evident in macroeconomic studies (Rapoport & Docquier, 2006). This is particularly important within a rural context as motives behind remittances consider aspects of investment, insurance and other activities beyond traditional altruistic motives (Rapoport & Docquier, 2006).

The role of remittance receipt on household investments has long been an interest of research, but these do not often take into account entrepreneurial investments. Research has predominantly focused on areas of investment in education and health. For example, Adams & Cuecuecha (2013) studied remittance receipt and household spending effects on poverty and investments. While their study identified greater spending on the margin in investment opportunities, this was from the perspective of housing, education and health and did not look at entrepreneurial investments. Amuedo-Dorantes and Pozo (2006) studied the impact of remittances on business ownership in the Dominican republic and discovered that remittance recipients were less likely to own businesses compared to those that did not. They suggested that this finding was due to the income effect of remittance receipt leading to the purchase of leisure goods or alternative investments in education and housing. However, issues of reverse causality could also be suggested as their research identified that business ownership as whole increases the likelihood of remittance receipt. This indicates that remittance flows tend to increase as a means of migrant investments in business prospects. Vasco (2013) also assessed

the role of remittances and migration on business ownership in rural Ecuador which showed that neither migration nor remittances were associated with being self-employed. However, reasons for this often varied. Such as the fact that Ecuadorians would often channel remittances towards less risky investments such as land, or would avoid entrepreneurship due to the recent economic turmoil.

In trying to understand contextual factors surrounding remittances and entrepreneurship, Yavuz and Bahadir (2021) studied the effects of migrant remittances and ethnic diversity on new business creation in developing countries. Their research identified a positive link between migrant remittances and new business creation. On the other hand, ethnic diversity was found to have a negative relationship with new business creation due to limited to limited social network effects resulting from a lack of homogeneity. Most importantly, their research identified that increased ethnic diversity results in a strengthened positive relationship between new business creation and remittance receipt (Yavuz & Bahadir, 2021). While insightful in their findings, their findings potentially underestimated the effects of remittances due to limited data on the informal economy.

Evidence from Woodruff and Zenteno (2007) indicates that remittance flows to microenterprises in Mexico within migrant networks are associated with higher investment, capital output ratios and profits. While this may be the case, they do not indicate an increase in sales, which raises questions about whether remittances provide liquidity in the same way they suggest. A further interrogation of the data suggested that remittances create more impact in high capital sectors, as sales were shown to increase among other associated factors. This was not the same with low capital sectors, which seemed to only show increased investment with little association to migrant networks. Remittances may also have varying effects in the context of gender, but very few studies have explored this in the context of entrepreneurship. One of the few studies in the case was conducted by Acosta (2007) in El Salvadorian households, remittance receipt was associated with more entrepreneurship involvement in females, compared to those that did not receive any remittances.

Yang (2008) assessed the effects of exchange rate shocks on households in the Philippines and found that remittances had a small positive but insignificant effect on entrepreneurship. While this did not reveal much, further analysis revealed that remittances in the context of exchange rate shocks led to higher business creation in more capital-intensive sectors. This indicated that remittances did play a role in easing capital constraints for entrepreneurial motives, especially

when favoured by exchange rate shocks. There was also a notable decline in income from crop farming and grocery retail entrepreneurship, which may suggest a movement of entrepreneurship activities from one sector to another.

Kakhkharov (2019) examined the role of remittance receipt on the likelihood of small business ownership for families in Uzbekistan using household data. The results highlighted that income and remittance receipt do not increase the likelihood of business ownership. However, a positive relationship was found when using an interaction term of income and remittances. This showed that low-income households were less likely to engage in family entrepreneurship, whereas for high income households, likelihood of business ownership was higher. Kakhkharov (2019) suggests that this is because low income households have not accumulated enough savings to engage in business activities and instead channel remittances towards other household necessities. The study also highlights that families that run businesses might be receiving remittances as direct investments to those businesses.

A handful of studies have also specifically adressed remittance effects within the Malawian context (Banda, 2020; Kangmennaang et al., 2018; Thomas & Inkpen, 2013). Kangmennaang et al. (2018) assessed the effects of remittances on food security and household asset investiture using a primary survey of 1000 households in Northern and Central Malawi. In both cases, a positive relationship was found between remittance receipt and food security and household asset accumulation. While providing some guidance in terms of remittance receipt and investment into productive assets, a stronger emphasis was placed on food security, and this did not control specifically for variables such as gender. The study also did not investigate entrepreneurial activities, as it focused on asset accumulation as a proxy for household wealth. In addition to this, the study's sample was not nationally representative as it focused on smallholder farmers in only two districts of Malawi.

Banda (2020) undertook a qualitative study on the effects of remittances in rural communities within the district of Nkhatabay through the use of oral interviews and historical archives. This study highlighted a prominent role of remittances in improving educational and familial outcomes and infrastructure development in terms of local housing. Entrepreneurial outcomes were said to have a limited effect as migrants were not known to start cross-border enterprises, however, migrant relatives were suggested to later engage in entrepreneurial activities. The nature of the study makes it difficult to ascertain whether remittances had a direct relationship on entrepreneurial activity.

As migration and remittances are closely linked as a subject area, Thomas and Inkpen (2013) assessed the likelihood of self-employment amongst migrants returning to Malawi using census data. The study made comparisons to internal migrants, immigrants within Malawi as well as assessing the likelihood of self-employment in agricultural activities. The study highlighted that migrants from Western countries were less likely to engage in self-employment in comparison to those from African countries and within the SADC. Despite that remittances were not central to their inquiry; they were highlighted, and their research identified that remittance receipt is associated with self-employment in non-agricultural sectors.

While most of the studies on remittances are located outside of Africa, some do consider the case of Malawi but very few do so on a nationally representative level. It is also clear that due to the mixed nature of research, contextual factors still need to be used to fully understand how remittances operate for entrepreneurial purposes and can be leveraged, if at all. Naudé et al. (2017) points out that forming a better understanding of remittance use requires an assessment of their origins, where they are being directed, and what their intended use is to better understand fully understand interactions between remittances and entrepreneurship. This paper seeks to add to the body of knowledge on this topic by specifically assessing remittance and entrepreneurial activities using Malawian household data. This may help in giving more insight in how remittances may function within the SADC region and build on this sub sector of research from an African perspective by using Malawi as a case in point. This is particularly also important in the context of higher cost corridors for remittance transmission in Africa (Bisong et al., 2020), as well as the evolution in the ease of sending domestic remittances with the uptake of mobile money and digital financial services.

Chapter 3: Methodology

3.1 Introduction

This chapter provides a discussion of methodological approach of the study. This begins with a brief discussion of the research approach and design of the chosen sample. A description of the chosen variables and their preparation is provided. The models of the study are specified to highlight the key questions of interest, followed by a description of how the regression has been estimated.

3.2 Research Approach

This research has been undertaken using a quantitative research approach. This approach has been due to the positivist nature of the research question, which allows for the testing of the underlying theory, namely the NELM framework (Creswell & Creswell, 2018). The use of survey data allows for the examination of the relationship between the chosen variables of entrepreneurship and remittances and can allow for generalisation using the provided survey weights (Creswell & Creswell, 2018).

3.3 Research Design

3.3.1 Data period and source

This research is using secondary cross-sectional data from the Malawi Fifth Integrated Household Survey which was collected between 2019-2020 (National Statistical Office, 2020a). This is a nationally representative survey conducted by the Malawi Government through the National Statistics Office with technical assistance from the World Bank and Food Policy Research Institute. The survey is conducted every 3 to 5 years and covers 12,288 households from across Malawi. Due to Covid-19, the most recent survey only covers 11,434 households but is still considered nationally representative. The intentions behind the survey creation stem from the need to assess the nature of Malawian households in relation to the Sustainable Development Goals and Malawi's Growth and Development strategy. The survey employs a stratified two-stage sample design which identifies respondents listed through the 2018 national census and covers all the national districts.

3.4 Description of Variables

3.4.1 Dependent variables: Household Entrepreneurship

In a number of studies, entrepreneurship has been measured as self-employment (Finkelstein Shapiro & Mandelman, 2016; Yang, 2008). The decision to engage in entrepreneurship is usually one that involves taking a risk to receive to obtain a profit (Smith & Chimucheka, 2014). In this case, entrepreneurship is measured by assessing whether anyone in a household is engaged in any form of household enterprise, which ranges across agricultural businesses, service related business, transportation, any sale of a service or product on the street or professional services amongst others. This falls in line with the overarching definition as the pursuit of a risk taking activity to achieve a profit

3.4.2 Independent variable: Remittances:

According to the NELM framework, remittances are expected to reduce liquidity constraints within the household (Bloom & Stark, 1985) which can in turn allow them to overcome liquidity issues in terms of entrepreneurial activities. Evidence of remittances act as a substitute for credit has been observed in literature in support of this (Ambrosius & Cuecuecha, 2013; Amuedo-Dorantes & Pozo, 2006; Yang & Choi, 2007). It is measured by assessing whether a household has access to remittances. A dummy variable that accounts for access to remittances is included to capture this from a survey questionnaire asking whether the household receives income from children living elsewhere. As a central variable within this investigation, it is expected that remittance receipt will be associated with a higher likelihood of being engaged in entrepreneurial activities as this can act as a substitution for loans that may have been undertaken for business reasons.

3.4.3 Control variables

a) **Household Size:** refers to the number of people in a household. Evidence indicates that larger households are more likely to be engaged in entrepreneurial activities (Pittino et al., 2020). This is the case as larger household may offer more support, mentoring and more household income (if there are more household income earners) as well as risk sharing and cost reduction opportunities (Pittino et al., 2020). It is expected that larger households will be more likely to engage in entrepreneurial activities.

b) **Age:** refers to the number of years alive. Age is also associated with the likelihood of being an entrepreneur, with middle aged residents being the most likely to engage in entrepreneurial activities. This is because of the ability to accumulate both financial and non-financial resources and experience necessary to become an entrepreneur (Démurger & Xu, 2011). It is expected that the presence of older household heads will be associated with a higher likelihood of being engaged in entrepreneurial activities.

c) **Gender:** Overall, the role of gender seems to indicate that females are less likely to engage in entrepreneurial activities as a result of lack of access to credit and start-up capital (Brixiová & Kangoye, 2016). However, some evidence does indicate that when remittances are involved, female residents are more likely to engage in entrepreneurial activities than those without access to remittances (Acosta, 2007). It is expected that female headed households will be more likely to engage in entrepreneurial activities.

d) **Marital Status:** Marital status appears to have an effect on entrepreneurship as some evidence indicates married couples are more likely to be engaged in self-employment as work can be shared (Démurger & Xu, 2011). It is expected that households headed by a married couple will be more likely to engage in entrepreneurial activities.

e) **Education:** refers to the level of education. Education has been found to be closely linked with likelihood of engaging in entrepreneurial activities (Marchetta, 2012), while this may not be the case with tertiary education as individuals with higher education levels are more likely to be formally employed (Thomas & Inkpen, 2013). Categorical variables for varying education levels are included in the model and it is expected that having secondary education will be associated with greater entrepreneurial activities, whereas tertiary education may present an ambiguous effect on entrepreneurial activities.

f) **Access to Credit:** Despite that remittances can help ease liquidity constraints, overall access to credit can also allow for households to invest in as well as start entrepreneurial activities (Duflo et al., 2013; Vasco, 2013). Therefore, access to credit is included due to its overall close links to entrepreneurial activities. We expect that access to credit will be associated with a greater likelihood of engaging in entrepreneurial activities.

Variables for access to infrastructure have also been included as poor infrastructure limits investments into productive assets.

g) **Access to Infrastructure:** Variables for access to infrastructure have also been included as poor infrastructure limits investments into productive assets. To account for this, instruments for this include dummy variables for **piped water**, and **electricity access** as employed by Vasco (2013). It is expected that increased infrastructure will be associated with a higher chance of being involved in entrepreneurial activities.

h) **Internet Access.** A dummy variable for internet access is included within the regression. Internet access acts as a means of reducing information asymmetry within business environments and can assist in the reduction of informational rents for entrepreneurial activities (Asongu & Odhiambo, 2020). Access to internet can also act as a means for entrepreneurs to advertise and sell their services through social media, which acts as another reason for the inclusion of this variable. It is expected that that increased internet penetration or usage will be associated with a higher chance of engaging in entrepreneurial activities.

i) **Urban Household:** Within the contextual variables, a dummy variable for urban household classification has been included. Urban households have been found to engage in more entrepreneurial activities than rural households (Hamdouch & Wahba, 2015). This is likely the case as urban residence can also allow households greater access to resources and financial services to undertake entrepreneurial activities (Kakhkharov, 2019). While urban residence is associated with more formal employment, high urban unemployment within African contexts may mean there is a greater push towards self-employment (Thomas & Inkpen, 2013). It is expected that urban residence will be associated with higher likelihood of engaging in entrepreneurial activities.

Table 3 - Description and Summary of Variables

Variable	Definition	Expected Sign
Dependent Variable		
Household Entrepreneurship	Household Entrepreneurship Dummy. 1 for Household Entrepreneurial Activities, 0 otherwise	
Independent Variable		
Remittance Access	Dummy for remittance receipt. 1 for remittance receipt, zero otherwise	+
Control Variables		
Household Size	Number of dependents and adult figures in the household including the head of the household	+
Age	Average Age of Household.	+
Gender	Gender of Household Head. 1 for female, 0 for males	+
Marital Status	Marital Status of Household Head. 1 for married, 0 otherwise	+
Education	Qualification level for household head. 0 – 8, where 1 refers to no qualification and 9 refers to the receipt of a PhD	*
Access to Credit	Dummy for household credit, 1 if there is access, zero otherwise	+
Access to Piped Water	Dummy variable for Household access to piped water. 1 for Piped Water, 0 for no piped water	+
Access to Electricity	Dummy variable for access to electricity. 1 for Electricity Access, 0 otherwise	+
Internet Access	Dummy variable for Internet Access. 1 for internet access if amount spent on internet access is > 0, zero otherwise	+
Urban Household	Dummy variable for whether a household is urban or rural. 1 for Urban Households, 0 for rural	+

3.5 Estimation Approach

With Y being a binary choice model, β_i cannot be interpreted through the use of marginal effects. A linear probability model would normally expect that:

$$\text{Prob}\ (Y = 1\ |X =\ x) = \boldsymbol{x}'$$

However, the current model is non-linear and as the dependent variable for remittance receipt is binary, predicted probabilities using a linear probability model will not be limited between 0 and 1. The linear probability model would also violate other OLS assumptions such as heteroskedasticity. Therefore a Probit model, which is the cumulative density function of the standard probability distribution will be used to ensure that predicted probabilities are obtained.

The main model specification to examine the effect of remittances on households' decision to engage in entrepreneurial activities ($Entrepreneur_i$) can be described using the following Probit model:

$$Entrepreneur_i = \alpha + \beta_1 Remittances_i + \theta X_i + \partial C_i + \varepsilon_i \quad (1)$$

Where $Remittances_i$ is the dummy variable for the receipt of remittances from children living outside of the household, and X_i is a vector for household characteristics such as age, gender and education. C_i *is* a vector for contextual infrastructure related variables such as water and electricity, and internet access for household infrastructure. This vector also includes a classification for whether a household is within a rural or urban area. The error term is modelled by ε_i.

Female headed households will also be looked at using a similar model:

$$FemaleEntrepreneur_i = \alpha + \beta_1 Remittances_i + \theta X_i + \partial C_i + \varepsilon_i \quad (2)$$

Whereby, $FemaleEntrepreneur_i$ represents the likelihood to engage in entrepreneurship by female headed households. Due to the potential endogeneity of remittance receipt on household entrepreneurship, remittance receipt will have to be jointly estimated using simultaneous Probit models. This will mean remittance receipt is modelled as:

$$Remittances = \alpha + \theta X_i + \partial P_i + \varepsilon_i \quad (3)$$

Where X_i is a vector for household characteristics. P_i *is* a vector for contextual infrastructure related variables as well as the urban-rural split with an instrumental variable for account access also included. In essence the model will be considered in this way where y_1 is the likelihood to engage in entrepreneurship and y_2 is the receipt of remittances. While a number of exogenous factors have been identified as to whether a household engages in entrepreneurship, as mentioned, the decision to send remittances itself may be endogenous to the likelihood of engaging in entrepreneurship. In this case, the chosen instrumental variable is bank account access. This instrumental variable has been deemed suitable as it causes variation in the treatment variable of remittances, as access to an account can allow for you to receive remittances, and is only indirectly related to entrepreneurship. Remittances are also considered

endogenous in this case due to some of the omitted variables like income, which could not be included due to the nature sparseness of the variable under the conditions of investigation, as a result, the instrumental variable is able to deal with this.

This results in our basic model being as follows:

$$y_1^* = y_2 y_1 + x_1 \beta_1 + u_1 \quad (4)$$

As a result, the realised model becomes:

$$y_1 = 1[y_2 y_1 + x_1 \beta_1 + u_1 > 0] \quad (5)$$

$$y_2 = 1[x\beta_2 + u_2 > 0] \quad (6)$$

Where the indicator function comes one [1] when the conditions are true and zero otherwise. $x = [x_1 \ x_2]$ is made up of all the exogenous variables. Equation 3 consists of a reduced form equation for y_2 equal to 1 when remittances are received by the family. If remittance receipt is correlated with the error term, the Probit MLE of equation 5 becomes inconsistent, as a result, equations 5 and 6 will need to be jointly estimated. As these two dependent variables are binomial by nature, a bivariate Probit model specification acts as a control for unobserved heterogeneity and endogeneity, making it a suitable estimation approach for this research question. An instrumental variable with a test of endogeneity is also conducted to address the issue of endogeneity

Chapter 4: Discussion of Findings

4.1 Introduction

Chapter Four contains the findings and results of the dataset analysis. First, the descriptive statistics of the variables of interest in the dataset are discussed, which is followed by an analysis and discussion of correlation between the variables chosen. Lastly, the regression results are discussed in their different conditions.

4.2 Descriptive Statistics

Table 4 highlights the descriptive statistics of the variables within the dataset. Results show that 37% of households engage in household entrepreneurship, with only 16.6% of the sample receiving remittances. The average household size consists of 5.615 people per household. The average age across every household is 27.655 years. Out of the sample only 11.2% of the household heads have gone to school at either primary, secondary or tertiary level. On average, 34.1% of each household is headed by a female, while 69.3% of each household has a married household head. Household credit is also found to be accessible to 28.1% of each household. Infrastructure variables indicate that 8.4% of the household have access to piped water, with 9.7% having access to electricity and 18.1% of the households having access to internet. On average 12.8% of the households are in Urban areas.

Table 4 – Descriptive Statistics

Variable	Mean	Standard Deviation	N
Entrepreneurship	0.377	0.485	20541
Remittances	0.166	0.372	20547
Household Size	5.615	2.345	20547
Age	27.655	11.409	20547
Female	0.341	0.474	20547
Married	0.693	0.461	20547
Education	0.112	0.316	18017
Credit	0.281	0.449	20547

Piped	0.084	0.278	20547
Electricity	0.097	0.296	20547
Internet	0.181	0.385	10793
Urban	0.128	0.334	20547

Source: Estimates from Research

Table 5 looks at the frequency distribution of the education level of the chosen sample. As can be noted, 88.77% of the sample was found to have no formal education. When looking more closely, households with any form of schooling tend have primary or secondary education in the form of a Primary School Leaving Certificate, Junior Certificate of Education or MSCE/GCSE.

Table 5 – Frequency Distribution Table of Education Level

Education Level	Frequency	Percent	Cumulative
None	15994	88.77%	88.77%
PSLC	1012	5.62%	94.39%
JCE	479	2.66%	97.05%
MSCE/GCSE	411	2.28%	99.33%
A-Level	39	0.22%	99.54%
Diploma	45	0.25%	99.79%
Degree	30	0.17%	99.96%
Masters	5	0.03%	99.99%
PhD	2	0.01%	100.00%
Total	18017		

4.3 Correlation Coefficient

The Pearson correlation coefficient was tested across all variables used. This was done in order to test for multicollinearity. Entrepreneurship was found to have a low correlation with all variables, with the highest correlation being a weak positive correlation with variables for electricity access, internet and being in an urban household. Remittance access also had a low correlation with all the variables, with the highest correlation being a weak positive correlation with household size. A strong negative relationship was found between female headed households and married households. Household size and the average age of each household were also found to have a moderate negative correlation. Variables such as electricity access, access to piped water and internet access were found to have a moderate positive correlation. Urban households were found to have a moderate positive correlation with access to piped water

and electricity, whereas internet access had a weak positive correlation with internet access. All other variables were found to have a weak correlation.

Table 6 – Correlational Analysis

	Entrepreneur	Remit	Income	H Size	Age	Female	Married	Education	Credit	Piped
Entrepreneur	1									
Remit	-0.0280*	1								
Income	0.0134	0.1171*	1							
H Size	0.0678*	0.0451*	0.0305*	1						
Age	-0.0627*	0.0492*	0.1193*	-0.2778*	1					
Female	-0.0712*	0.0339*	-0.0731*	-0.1318*	0.002	1				
Married	0.0891*	-0.0205*	0.0548*	0.1848*	-0.0901*	-0.7607*	1			
Education	0.0737*	0.0444*	0.2434*	-0.0726*	-0.0310*	0.0111*	-0.0175*	1		
Credit	0.1154*	-0.0233*	-0.0649*	0.0321*	-0.0908*	-0.0027	0.0193*	0.0197*	1	
Piped	0.1296*	0.0413*	0.3092*	0.0143*	0.0543*	-0.0464*	0.0217*	0.2864*	-0.0234*	1
Electricity	0.1674*	0.0965*	0.2839*	0.0279*	0.0218*	-0.0723*	0.0498*	0.3114*	0.0067	0.5720*
Urban	0.1715*	0.0229*	0.1967*	-0.0262*	-0.0041	-0.0581*	0.0225*	0.2666*	-0.0302*	0.4703*
Internet	0.0996*	0.1101*	0.2790*	-0.0409*	0.0453*	-0.0003	-0.0276*	0.3140*	-0.0226*	0.4141*

Note: Asterisk indicates significance to the 5% level

4.4 Regression Results

The models were estimated using Maximum Likelihood Estimation (MLE) with a simultaneous bivariate Probit estimation technique. The results are split up into two section with section one assessing the whole sample, whereas section two undertakes a gendered analysis, solely focusing on female headed households. In each section, the first model includes the internet variable, in order to assess the effect of internet access on entrepreneurial activities, and the second models look at entrepreneurial activities without considering internet access, as has been done with much of the research in previous studies. The first column of each table focuses on the likelihood of receiving remittances, whereas column 2 focuses on the likelihood to engage in entrepreneurship. Predicted probabilities are looked at in the third column, and this allows for the assessment of marginal effects for binary regressors.

A Wu-Hausman test for endogeneity was performed using an OLS procedure, the results of which are included in each table. The Hausman tests in each model except for the full model in Table 7 indicated that bank account access served as a strong instrument for remittances as the p value was found to be small (less than 0.05).

The determinants of remittances in table 7 indicate that female headed households and individuals with primary school education have a higher probability of receiving remittances, and this is significant to a 1 percent level. Household age and size were also found to increase the likelihood to receiving remittances at the 1 percent level. Holding a diploma was found to have a positive effect on the likelihood of receiving remittances at the 10 percent level. On the other hand, holding a bachelor and master's degree results in a lower probability of receiving remittances and this is significant to the 10 and 1 percent level respectively. Access to household credit was found to decrease the likelihood of receiving remittances at the 5 percent level.

In the first model, remittances were found to have an insignificant effect on the likelihood to engage in entrepreneurial activities. This follows the findings of (Vasco, 2013), however the reasons behind this may be associated with the inclusion of the internet variable, which increases the number of restrictions for the model. This could have also affected the outcome of the instrumental variable. On the other hand, the likelihood to engaging in entrepreneurial activities for a household head with a master's degree was positive at the 1 percent level, with a predictive probability of 1. Despite the promise in this figure, the sample size of those with master's degrees in the dataset, leaves limited room for application. Similarly, having a PhD, seemed to indicate a negative relationship with the likelihood of engaging in entrepreneurial activities at the 1 percent level. This falls in line with research suggesting that access to tertiary education is less likely to lead to household entrepreneurship (Thomas & Inkpen, 2013). When considering the predicted probability however, the results are less meaningful due to very small size of the effect.

On the other hand, the positive relationship between household credit and the likelihood to engage in entrepreneurship is positive and significant at the 1 percent level, with a predicted probability of 0.491. This falls in line with literature suggesting that access to credit can be a strong source of helping to ease liquidity constraints (Duflo et al., 2013; Vasco, 2013).

Another central variable of interest in this regression was internet access, and while a positive relationship was found, there was no significance in the relationship. This does not follow suit with research suggesting that internet access may reduce information rents, thus increase entrepreneurial activity(Asongu & Odhiambo, 2020). In addition to this, the richness of the internet variable from the survey could be limiting the findings from the inclusion of this variable. Contextual variables such as being in an urban household indicated a positive relationship with the likelihood to engage in entrepreneurial activities at the 1 percent level. This was found to have a predictive probability of 0.546, which follows the idea that urban presence can provide for access to resources to engage in entrepreneurial activities. This is likely due to access to resources that will allow for these entrepreneurial activities (Hamdouch & Wahba, 2015). Alternatively, the pursuit for household entrepreneurship is also likely to be factored in by the presence of high urban unemployment (Thomas & Inkpen, 2013) .

Table 7 – Model 1 Regression Results: Full Model

	(1)		(2)		(3)	
	Likelihood to Receive Remittances		Likelihood To Engage in Entrepreneurship			
	Coefficient	Standard Error	Coefficient	Standard Error	Predicted Probability	Standard Error
HH Receives Remittances			0.822	-0.86	0.611**	-0.254
Female Headed HH	0.456***	-0.162	-0.0288	-0.18	0.376***	-0.0557
Married HH Head	0.0772	-0.153	0.155	-0.143	0.417***	-0.0523
HH Education: PSLC	0.365***	-0.136	-0.0727	-0.19	0.365***	-0.0628
HH Education: JCE	-0.245	-0.265	-0.096	-0.202	0.398***	-0.0963
HH Education: MSCE/GCSE	0.124	-0.291	-0.256	-0.168	0.331***	-0.0784
HH Education: A-Level	0.241	-0.743	0.0609	-0.644	0.415	-0.262
HH Education: Diploma	0.640*	-0.381	0.639	-0.63	0.484***	-0.141
HH Education: Degree	-0.893*	-0.502	0.298	-0.503	0.550***	-0.19
HH Education: Masters	-5.399***	-0.265	6.987***	-0.237	1.000***	-2.55E-09
HH Head Education: PhD	0.426	-0.715	-7.137***	-0.366	5.74E-11	-3.00E-10
HH Credit	-0.205**	-0.102	0.348***	-0.0817	0.491***	-0.0496
HH Piped Water	-0.223	-0.161	0.230*	-0.126	0.486***	-0.0614
HH Electricity	0.380***	-0.146	0.0791	-0.174	0.405***	-0.052
HH Internet	0.232*	-0.138	0.176	-0.172	0.441***	-0.048
Urban HH	-0.241*	-0.133	0.480***	-0.117	0.546***	-0.0495
Household Size	0.0776***	-0.0287	-0.0109	-0.0312		
Average HH Age	0.0207***	-0.0049	-0.0130**	-0.00558		
Account Access (Instrument)	-0.0928	-0.0982				
Constant	-1.978***	-0.319	-0.27	-0.343		
Observations	9,432		9,432		9,432	
Wu-Hausman test (p-value)	0.757 (0.469)					

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8 – Model 2 Regression Results: Adjusted Model

	(1)		(2)		(3)	
	Likelihood to Receive Remittances		Likelihood To Engage in Entrepreneurship			
	Coefficient	Standard Error	Coefficient	Standard Error	Predicted Probability	Standard Error
HH Receives Remittances			0.893***	-0.335	0.584***	-0.11
Household size	0.0652***	-0.0212	0.0174	-0.0196		
Average HH Age	0.0138***	-0.00268	-0.00712***	-0.0026		
Female Headed HH	0.271**	-0.105	-0.149	-0.0976	0.309***	-0.0275
Married HH Head	0.051	-0.101	0.0757	-0.099	0.354***	-0.0233
HH Education: PSLC	0.253**	-0.117	-0.0809	-0.141	0.314***	-0.0477
HH Education: JCE	-0.279	-0.219	-0.0753	-0.163	0.337***	-0.0575
HH Education: MSCE/GCSE	0.296	-0.252	-0.226	-0.161	0.272***	-0.05
HH Education: A-Level	0.203	-0.699	0.0235	-0.57	0.347*	-0.208
HH Education: Diploma	0.674*	-0.373	0.617	-0.444	0.445***	-0.134
HH Education: Degree	-0.767	-0.52	0.372	-0.445	0.497***	-0.163
HH Education: Masters	-5.710***	-0.139	-0.109	-0.72	0.336	-0.235
HH Head Education: PhD	0.753	-0.742	-6.613***	-0.209	1.82E-09	-3.40E-09
HH Credit	-0.134*	-0.0772	0.436***	-0.0645	0.451***	-0.0262
HH Piped Water	-0.153	-0.144	0.354***	-0.118	0.460***	-0.0408
HH Electricity	0.515***	-0.126	0.0674	-0.126	0.337***	-0.035
Urban HH	-0.245**	-0.119	0.556***	-0.0978	0.519***	-0.0331
Account Access (Instrument)	-0.225***	-0.0797				
Constant	-1.647***	-0.219	-0.614***	-0.197		
Wu-Hausman test (p-value)	15.176 (0.000)					
Observations	18,011		18,011		18,011	

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 8 shows the results of the second model which does not include the internet variable. When assessing the determinants of receiving remittances, variables such as household age and size increased the likelihood to receive remittances at the one percent level, and female headed households at the five percent level. Primary school education and access to electricity were also more likely to increase the likelihood of receiving remittances, whereas a Master's education and living in an urban household decreased this likelihood.

Remittances are found to have a positive effect on the likelihood to engage in entrepreneurship and this is significant to the 1 percent level. This follows the research findings indicating a positive relationship between remittance receipt and entrepreneurial activity and performance (Banda, 2020; Woodruff & Zenteno, 2007; Yavuz & Bahadir, 2021). The average predicted probability of engaging in entrepreneurship was found to be 0.584. Urban households are also found to have similar effects on the likelihood to engage in entrepreneurship with a predicted probability of 0.519. The average age on the other hand, was found to have a negative effect on likelihood to engage on entrepreneurship, which counters research suggesting that older households are more likely to successfully engage in entrepreneurial activities due to experience (Démurger & Xu, 2011). Level of education did not seem to have a significant effect on the likelihood to engage in entrepreneurship, except for PhD holders who were less likely to engage in entrepreneurship at the 1% level, falling in line with the findings of tertiary education not leading to higher entrepreneurial outcomes (Thomas & Inkpen, 2013). However, the predicted probability was found to be quite small. Female headed households were less likely to engage in entrepreneurial activities but this was not significant.

4.5 Gendered Analysis of Results

The following section focuses specifically on female-headed households, in order to understand whether remittances may have differing effects on household entrepreneurship. Looking specifically at female headed households can help understand whether different policy interventions will be required at this level.

Table 9 shows the results of the first model on female headed households only. The determinants of receiving remittances showed that primary education results in an increased likelihood of receiving remittances at the one percent level. This was also the case with PhD holders, however the sample size in this case is likely to be small as there were only two PhD

holders in the sample being analysed. Access to household credit was also associated with a decreased likelihood of accessing remittances.

The results showed that female households that receive remittances are less likely to engage in entrepreneurial activities at the 1% level. Access to remittances was also found to have a very low predictive probability of 0.0135. This goes against the findings of Acosta (2007), but the possible reasons for this difference is that female headed households could be channelling remittances towards other areas such as education and food security. While the overall effect of entrepreneurship on remittances was found to be negative, the effects of education are still of interest when considering that female headed spending patterns may often result in better outcomes for education (Pickbourn, 2016). Another potential reasoning for the decreased likelihood might be that female households are generally poorer, and would thus support the findings of (Kakhkharov, 2019) who suggested that low income households are more likely to channel remittances towards household necessities.

When assessing the educational outcomes, education level seemed to be quite relevant when assessing female headed households. Primary education or access to a PSLC was found to have a positive relationship with the likelihood to engage in entrepreneurship at the 1 percent level. Having a diploma was also associated with an increased likelihood of engaging in household entrepreneurship at the 1 percent level. The predictive probability engaging in entrepreneurial holders for PSLC holders was 0.253, whereas for diploma holders, this rose to 0.450. PhD holders seemed less likely to engage in entrepreneurial activities and this had no predictive probability. These results somewhat coincide with literature as higher levels of education were associated with a lower likelihood of engaging in entrepreneurship (Thomas & Inkpen, 2013), however, intermediate levels of education such as in the form of a diploma indicated a positive relationship with entrepreneurship (Marchetta, 2012). This may suggest that female household decisions still result in positive outcomes for entrepreneurship if household spending on education is higher, however this interaction has not been assessed in this study. Internet access seemed to have a positive relationship with household entrepreneurship, but this was not significant.

Table 9 – Regression Results: Female Households: Full Model

	(1)		(2)		(3)	
	Likelihood to Receive Remittances		Likelihood To Engage in Entrepreneurship			
	Coefficient	Standard Error	Coefficient	Standard Error	Predicted Probability	Standard Error
HH Receives Remittances			-1.514***	-0.208	0.0135	-0.0216
Household size	0.0676*	-0.0373	0.0341	-0.0376		
Average HH Age	0.00388	-0.00868	-0.00551	-0.0078		
Married HH Head	0.0186	-0.181	0.0437	-0.159	0.253***	-0.0355
HH Education: PSLC	0.689***	-0.235	0.626***	-0.189	0.227***	-0.0619
HH Education: JCE	-0.268	-0.399	-0.329	-0.349	0.202***	-0.0691
HH Education: MSCE/GCSE	-0.0536	-0.385	0.237	-0.355	0.321***	-0.0634
HH Education: Diploma	0.839	-0.614	6.907***	-0.316	0.450**	-0.229
HH Education: Degree	0.0222	-0.627	-0.18	-0.617	0.19	-0.139
HH Head Education: PhD	7.178***	-0.506	-6.419***	-0.449	0	0
HH Credit	-0.389**	-0.165	0.0645	-0.17	0.311***	-0.0422
HH Piped Water	-0.154	-0.301	-0.0106	-0.238	0.272***	-0.0495
HH Electricity	0.483	-0.322	0.344	-0.263	0.225***	-0.0581
HH Internet	0.127	-0.203	0.243	-0.172	0.278***	-0.0471
Urban HH	-0.184	-0.291	0.129	-0.237	0.308***	-0.0487
Account Access (Instrument)	0.213	-0.138				
Constant	-1.218***	-0.398	-0.0181	-0.363		
Wu-Hausman test (p-value)	3.642 (0.0263)					
Observations	2,525		2,525		2,525	

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 10 highlights the results of female headed households without accounting for the effect of internet access. When assessing the likelihood to receive remittances, primary education and PhD holders were found to increase the likelihood of receiving remittances, whereas access to credit was associated with a decreased likelihood of receiving remittances. Similar to the full model, access to remittances was associated with a lower likelihood of engaging in entrepreneurship at the 1 percent level which also goes against the findings of Acosta (2007). This was also associated with a low predictive probability of 0.00354. In this model however, larger average household size was associated with a higher likelihood of engaging in entrepreneurial activities at the 1 percent level which indicates some form of effect, as was found by Pittino et al. (2020). Education seemed to follow a similar pattern to the full model, with secondary education in the form of having A-levels being associated with a lower likelihood of engaging in entrepreneurship for female headed households. Diploma holders still showed a strong effect in this condition, further indicating the value of some levels secondary and intermediate levels of education (Marchetta, 2012). In the same vein, PhD holders were also found to decrease the likelihood of engaging in entrepreneurship at the 1 percent level. Access to credit however, was found to have a increase the likelihood of engaging in entrepreneurship level, further indicating the importance of household credit for entrepreneurial outcomes.

Table 10 – Regression Results: Female Households: Adjusted Model

	(1) Likelihood to Receive Remittances		(2) Likelihood To Engage in Entrepreneurship		(3)	
	Coefficient	Standard Error	Coefficient	Standard Error	Predicted Probability	Standard Error
HH Receives Remittances			-1.518***	-0.0929	0.00354	-0.00324
Household size	0.0838***	-0.0273	0.0770***	-0.025		
Average HH Age	0.0059	-0.00419	-0.00276	-0.00387		
Married HH Head	0.053	-0.128	0.0486	-0.111	0.197***	-0.0267
HH Education: PSLC	0.436**	-0.196	0.521***	-0.146	0.241***	-0.0548
HH Education: JCE	-0.359	-0.325	-0.343	-0.285	0.156***	-0.0541
HH Education: MSCE/GCSE	0.367	-0.325	0.438	-0.283	0.236***	-0.0673
HH Education: A-Level	-6.065***	-0.174	-6.765***	-0.15	0	0
HH Education: Diploma	0.949*	-0.575	7.293***	-0.176	0.483**	-0.224
HH Education: Degree	0.246	-0.617	0.158	-0.618	0.184	-0.155
HH Head Education: PhD	7.651***	-0.323	-6.411***	-0.301		
HH Credit	-0.022	-0.109	0.372***	-0.0987	0.280***	-0.0268
HH Piped Water	-0.083	-0.247	0.143	-0.204	0.250***	-0.0419
HH Electricity	0.533**	-0.259	0.338	-0.225	0.168***	-0.0455
Urban HH	-0.0192	-0.23	0.365*	-0.188	0.300***	-0.0424
Account Access (Instrument)	0.227**	-0.0983				
Constant	-1.677***	-0.233	-0.672***	-0.204		
Wu-Hausman test (p-value)	25.605 (0.000)					
Observations	6,013		6,013		6,013	

Standard errors in parentheses. *** p<0.01, ** p<0.05

Chapter 5: Conclusions and Recommendations

5.1 Introduction

The following chapter is a summary and conclusion of the key findings of the study. Policy recommendations are also made to discuss potential interventions that can be made in light of these findings. In addition to this, avenues to future research are discussed, to emphasise the ways in which this research could be built upon to further understand the relationship between remittances and entrepreneurial activity in a developing country context.

5.2 Summary and conclusions

This study aimed was aimed at assessing the effect of remittances on the likelihood of a household to engage in entrepreneurship in Malawi using the Fifth Integrated Household Survey 2019-2020 . In the context of a country where the majority of businesses consist of microenterprises, which often struggle to find capital to survive, this study saw remittances as an alternative source of foreign investment that could provide this capital. In addition to this, the study focused on assessing this effect female headed households, in order to understand if different dynamics may be at play to overall household dynamics. The data was analysed using a bivariate Probit regression in two ways, with one set of control variables including a variable that assesses whether a household has internet access (the full model), and a second model without internet access (adjusted model).

While entrepreneurship is a key means of economic development in Malawi, only 37.7% of the households analysed were engaged in entrepreneurial activities, with 16.6% of the households analysed receiving household remittances. When assessing the two main outcomes of the study, results looking at the overall households found that remittances had a positive but insignificant effect in the full model, however the adjusted model was found to have a positive and significant effect, with a predicted probability of 0.584. On the other hand, the assessment of female headed households found that remittances are associated with a lower likelihood of engaging in entrepreneurial activities with poor predicted probability. This may indicate a need for stronger support for female-headed households that may need better sources of capital and support for their entrepreneurial pursuits.

Other key findings of the study also emphasised the role of credit as a source of financing for entrepreneurship which has a positive effect on the likelihood to engage in entrepreneurial activities in all conditions. Some forms of secondary education, particularly in the case of holding a diploma, seemed to also have positive effects on the likelihood to engage in entrepreneurship. The effects of education in particular could be partially mitigating the decreased likelihood shown by remittances, however this would need further assessment from future studies.

5.3 Policy recommendations

When assessing the overall results, the positive effects of remittances on household entrepreneurship indicate the need for government to place more importance on remittances as a source of capital. On a positive note, the overall cost of remittance transmission in Malawi and in the region seems to be coming down, but this could still be reduced as the costs of sending remittances can still make up 9% of the overall transaction value (Finmark Trust, 2021), which is still well above the SDG remittance price goal of 5%. This could potentially be mitigated by increased competition in the sector, but government could specifically also look at the improvement of financial education to improve the uptake of digital products and services tied to remittance transmission.

There is also room to improve the overall digital operating environment for the payments infrastructure needed to receive remittances. On the one hand, Malawi has quite a low penetration rate for internet access, as only 14.6% of the overall uses the internet according to a recent national survey (National Statistical Office, 2020b), which is relatively close to the sample of the dataset with 18.1% having access to internet. On the other hand, the digital operating environment includes a duopoly of mobile operators in Malawi which have been found to have higher data bundles pries per gigabyte on average compared to other countries in the region (MACRA, 2022). As a whole, the structure of the mobile operator market could opening the opportunity for anticompetitive behaviour, which may require some form of regulatory intervention which could include price controls. This could in essence assist in the uptake of digital services for remittances, and potentially also help in the pursuit of financial education for the same products if the cost of access to information is lower.

One of the key issues to assess looks into stronger support for female entrepreneurs in Malawi. This could be in the form of more explicit capital directed to entrepreneurial activities, as well

as other forms of support to ensure these businesses are more sustainable. While the government has created a Ministry of Gender, Community Development and Social Welfare (MoGCDSW), there are limited examples of policies that go towards improving female entrepreneurial outcomes, particularly in the context of funding. Majority of the current policies tend to go towards overall poverty alleviation strategies, despite the disproportionate effects faced by female households and female entrepreneurs.

While assessing policy implications, it is important to emphasise that the overall context may have into placing these into practice, particularly when entrepreneurial outcomes are affected by a number of factors. One key issue to consider is the need for a better overall enabling economic environment. Truen et al. (2016) emphasised that the mobilisation of economic activity through entrepreneurship is only as feasible as the local environment allows it to be, so it is particularly important for the government to make measures in the overall business environment, that can provide more stable conditions for positive economic activity.

5.4 Avenues for future research

The research focuses on remittances from the use of national household data, while this is a rich source of data, more could be learnt from designing a remittances survey that specifically addresses this topic as gaps in the data, may limit the generalisability of the results. From a methodological perspective, remittances were only considered from children living elsewhere that sent money to their families. There are multiple avenues that can be used to channel remittances, which included spouses and other relatives, and this could also be looked at more holistically through a survey designed to specifically look at this.

Further research could also place stronger focus on the interaction between other forms of household spending and female entrepreneurship. This can allow for other forms of spending, such as spending on education, to be better understood in the context of household entrepreneurship. Lastly, future research on Malawi could also look at the role of remittances in the context of farm related entrepreneurship and farm mechanisation. This can act as means of understanding how smallholder farmers develop from the use of dominant cash and stable crops for greater food and financial security. As the agriculture sector plays a dominant role in the Malawian economy, understanding how remittances affect smallholder farmers as a means of insurance and investment can also help inform policy on how best to deliver loans and

insurance programmes to Malawian farmers as government moves towards diversifying the agricultural sector.

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